SHARP SERVICE MANUAL

No. SX963MDMT831H

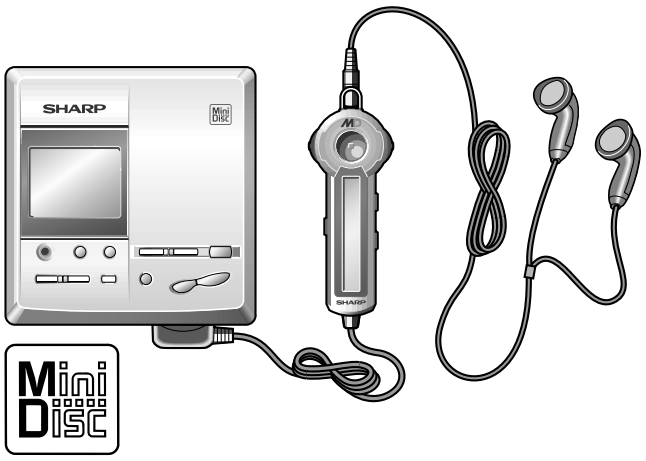

Illustration: MD-MT831H

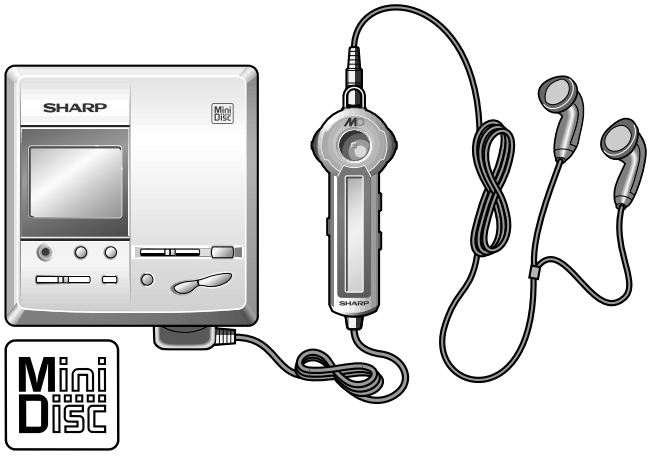

Illustration: MD-MT831W

MD-MT831H(GL)
MD-MT831W(GL)

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used.

CONTENTS

	Page
SAFETY PRECAUTION FOR SERVICE MANUAL	2
SPECIFICATIONS	3
NAMES OF PARTS	4
OPERATION MANUAL	5
QUICK GUIDE	8
DISASSEMBLY	10
REMOVING AND REINSTALLING THE MAIN PARTS	11
ADJUSTMENT	12
MD ERROR MESSAGE DISPLAY CONTENT LIST	26
BLOCK DIAGRAM	27
SCHEMATIC DIAGRAM	28
VOLTAGE	31
WIRING SIDE OF P.W.BOARD	32
WAVEFORMS OF MD CIRCUIT	35
NOTES ON SCHEMATIC DIAGRAM	36
TYPES OF TRANSISTOR AND DIODE	36
TROUBLE SHOOTING	37
FUNCTION TABLE OF IC	40
PARTS GUIDE/EXPLODED VIEW	
PACKING METHOD (MD-MT831H FOR U.K. ONLY)	

SHARP CORPORATION

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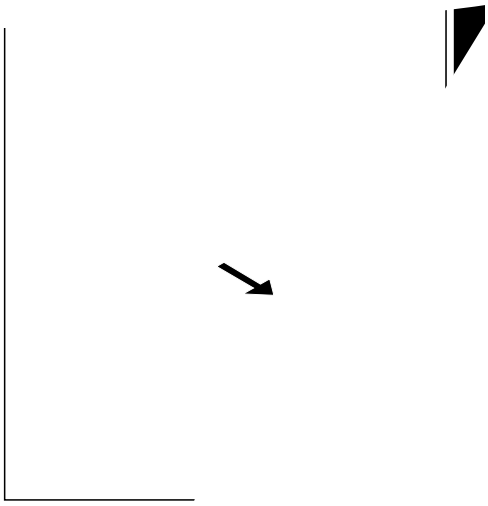
The contents are subject to change without notice.



Precaution to be taken when replacing an
The following precautions must be observed

Warning of possible eye damage when repairing:
If the AC adaptor or batteries are connected when t
pressed, the laser will light up during focus access (2-
opening between the magnetic head and the mechanica
at the laser during repair. Before repairing be sure to disc

es against exposure to the laser.

er) of the unit is removed, and the PLAY key is
During the operation, the laser will leak from the
). In order to protect your eyes, you must not look
adaptor and remove the batteries.

TROUBLESHOOTING

■ Moisture condensation

In the following cases, condensation may form inside the unit.

- Shortly after turning on a heater.
- When the unit is placed in a room where there is excessive steam or moisture.
- When the unit is moved from a cool place to a warm place.

When the unit has condensation inside, the disc signals cannot be read, and the unit may not function properly.

- If this happens, remove the disc. The condensation should evaporate in approximately 1 hour. The unit will then function properly.

Many potential "problems" can be resolved by the owner without calling a service technician. If something seems to be wrong with this product, check the following before calling your authorised SHARP dealer or service centre.

PROBLEM	CAUSE
The unit does not turn on.	● Is the AC adaptor disconnected? ● Is the battery exhausted? ● Is the unit in the hold mode? ● Has condensation formed inside the unit? ● Is the unit being influenced by mechanical shock or by static electricity?
No sound is heard from the earphones.	● Is the volume set too low? ● Is the remote control unit or the earphones plugged in? ● Are you trying to play a MiniDisc with data on it instead of a MiniDisc containing music?
When the operation buttons are pressed, the unit does not respond.	● Is the unit in the hold mode? ● Is the battery exhausted? ● Is the remote control unit plug or the earphone plug inserted firmly?
Some sounds are skipped.	● Is the battery exhausted? ● Is the unit being subjected to excessive vibration?
The MiniDisc cannot be ejected.	● Has the track number or character information been written on the disc yet? ● Is the unit in the recording or editing mode?
Recording and editing are impossible.	● Is the MiniDisc protected against accidental erasure? ● Is the unit connected properly to the other equipment? ● Is the AC adaptor unplugged or did a power failure occur whilst recording or editing? ● Is the unit in the hold mode? ● Is an optical signal being output from the external equipment? Read the operation manual for the external equipment.

If trouble occurs with a particular MiniDisc

- Depending on the MiniDisc, sound may skip or stop during playback if there is something wrong with the stored information. In such a case, try another MiniDisc before calling for service.

■ If trouble occurs

When this product is subjected to strong external interference (mechanical shock, excessive static electricity, abnormal supply voltage due to lightning, etc.) or if it is operated incorrectly, it may malfunction.
If such a problem occurs, do the following:

1. Unplug the AC adaptor from the AC socket.
2. Remove the battery.
3. Leave the unit completely unpowered for approximately 30 seconds.
4. Plug the AC adaptor back into the AC socket and retry the operation.

If strange sounds, smell or smoke come out of the unit or an object is dropped into the unit, remove the AC adaptor from the AC socket immediately and contact an authorised SHARP service centre.

MINIDISC SYSTEM LIMITATIONS

MiniDiscs are recorded using a different system than is used for cassette tapes or DAT recordings. Therefore, the following conditions may be encountered, depending on how the disc has been recorded or edited. These are due to system limitations, and should be considered normal.

Even if the maximum recording time of a MiniDisc has not been reached, "DISC FULL" or "TOC FULL" may be displayed.	When the number of tracks used reaches the limit, regardless of the remaining recording time, further recording will be impossible. (Maximum number of tracks: 255) If a MiniDisc has been recorded or edited repeatedly or if a MiniDisc has scratches on it, it may not be possible to record the maximum number of tracks on it.
Even if the number of tracks and the recording time have not reached the limit, "DISC FULL" may be displayed.	If there are scratches on a disc, the unit will automatically avoid recording in those areas. The recording time will be reduced.
Even if several short tracks are erased, the remaining recording time may not show an increase.	When the remaining recording time of a disc is displayed, short tracks less than 12 seconds long may not be included in the total.
Two tracks may not be combined in editing.	For MiniDiscs on which repeated recording and editing operations were performed, the COMBINE function may not work.
The total of the recorded time and time remaining on a disc may not add up to the maximum possible recording time.	A cluster (about 2 seconds) is normally the minimum unit of recording. So, even if a track is less than 2 seconds long, it will use about 2 seconds of space on the disc. Therefore, the time actually available for recording may be less than the remaining time displayed. If there are scratches on discs, those sections will be automatically avoided (no recording will be placed in those sections). Therefore, the recording time will be reduced.
When recorded tracks are played back using the cue and review operations, some sounds may be skipped.	For MiniDiscs on which repeated recording and editing were performed, some sounds may be skipped whilst cueing and reviewing.
A track number can be created in the middle of a track.	If there are scratches or dust on a MiniDisc, the track numbers following that track will be increased by one.

ERROR MESSAGES

Error messages	Meaning	Remedy
BATT EMPTY (Lo BATT)	● The battery is run down.	● Charge the rechargeable battery or replace the alkaline battery (or use the AC adaptor for power).
BLANK MD (BLANK)	● Nothing is recorded.	● Replace the disc with a recorded disc.
Can't COPY (Can't C)	● No copy can be made because of the SCMS copyright system.	● Record using the analogue cable.
Can't EDIT (Can't E)	● A track cannot be edited.	● Change the stop position of the track and then try editing it.
Can't FADE Can't A.F	● The recordable time is shorter than the fading time	● Record after you check the remaining recording time.
Can't READ* (Can'tS) (Can'T) (Can'tU)	● The disc is damaged.	● Reload the disc or replace it. ● Replace it with another recorded disc.
Can't REC (Can't R)	● Recording cannot be performed correctly due to vibration or shock in the unit.	● Re-record or replace it with another recordable disc.
Can't STAMP	● Editing is impossible.	● Check the number of tracks.
Can't WRITE (can'tW)	● Cannot save the TOC information correctly to a MiniDisc.(A large portion of the disc has been damaged.)	● Replace the disc with another recordable disc.
DEFECT (DEFECT)	● The disc is scratched.	● If the sound you hear is not right, try recording again. ● Replace the disc with another recordable disc.
DISC FULL	● The disc is out of recording space.	● Replace it with another recordable disc.
Er-MD (ErMD*)**	● You have come to the conclusion that the unit is out of order.	● To have it repaired, go to the distributor where you purchased the unit.
HOLD (HOLD)	● The unit is in the hold mode.	● Return the HOLD switch to its original position.
LOCKED (Can't LOCK)	● The OPEN lever was moved during recording or editing.	● Turn off the power and remove the MiniDisc.
NO DISC	● A disc has not been loaded.	● Load a disc.
NO SIGNAL (noSIG.)	● Poor connection of the digital cable. ● No output signal comes out from the external unit to playback.	● Connect the digital cable securely. ● If the portable CD player has a function to prevent sound skips,deactivate it. ● Playback with the connected unit.
PLAY MD (PLAY md)	● You tried to record on a playback-only disc.	● Replace it with a recordable disc.

( ) : Error messages seen on the remote control.
* : Number or Symbol.

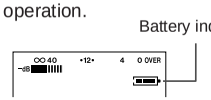
Error messages	Meaning	Remedy
POWER ?	● Improper power is being supplied.	● Use one of the specified power sources.
PROTECTED	● The MD is write protected. ● You tried to record without loading an MD ● A playback-only MD was loaded and the REC button was pressed when the power was off.	● Move the write protection knob back to its original position. ● Load a recordable MD. ● Replace it with a recordable MD.
SORRY (SORRY)	● Since a track number is currently being located or written to, the unit cannot accept your command.	● Wait for a while and try the operation again.
TEMP OVER (TEMP!)	● The temperature is too high.	● Turn off the power, and wait for a while.
TOC FORM (T form**)**	● There is an error in the recording signal	● Erase all of the signal errors, and then try recording again.
TOC FULL	● There is no space left for recording character information (track names, disc names, etc.).	● Replace it with another recordable disc.
Tr. Protect	● The track has been protected from being erased.	● Edit the track with the device on which it was recorded.
? DISC (? DISC)	● A disc which contains data other than music was played. ● There is an error in the signal from the disc.	● A disc which contains non-music data cannot be played. ● Replace it with another recorded disc.

( ) : Error messages seen on the remote control.
* : Number or Symbol.

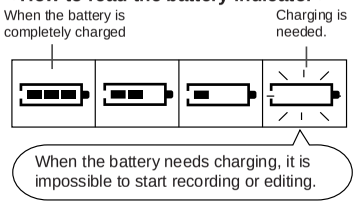
CONVENIENT OPERATION OF THE UNIT

■ Checking the remaining amount of battery charge

The remaining amount of battery charge is shown by the battery indicator ( ) during operation.



< How to read the battery indicator >



● When the battery is completely discharged, the whole battery indicator will flash. Recharge the battery or replace the alkaline battery with a new one.

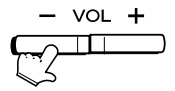
● When the battery has run completely out, "BATT EMPTY" (main unit) and "Lo BATT" (remote control unit) will appear. Then, the power will be disconnected automatically.

Notes:

● When using the unit with an alkaline battery or a rechargeable battery, the battery indicator will not correctly display the remaining capacity for approximately 20 seconds after the power has been turned on.
● When the AC adaptor included with this unit or a separately available car adaptor is used, the battery indicator will not be shown.
● The number of bars shown in the battery indicator may increase or decrease, depending on the operation being performed. This is normal.
● When the rechargeable battery and the alkaline battery are used at the same time, the rechargeable battery is used first, then the alkaline battery.
Since the battery indicator shows the remaining amount of the particular battery being used, the number of bars will increase when the unit switches to the alkaline battery.

PLAYING A MINIDISC

■ Adjust the Volume



■ Play

1 Insert the earphones plug firmly into the earphones socket on the remote control unit.

2 Plug the remote control unit into the socket on the main unit. Push the plug all the way in.

3 Insert a MiniDisc.

4

To interrupt playback:
Press the button.
● To resume playback, press the button again.

To stop playback:
Press the ▪■/:OFF button.

To turn off the power:
Press the ▪■/:OFF button whilst in the stop mode.

REMOVING AND REINSTALLING THE MAIN PARTS

Remove the mechanism according to the disassembling methods 1 to 5. (See Page 10.)

How to remove the spindle motor (See Fig. 11-1.)

1. Remove the solder joint (A1) x 4 of flexible PWB.
2. Remove the screws (A2) x 3 pcs., and remove the spindle motor.

How to remove the lift motor (See Fig. 11-2.)

1. Remove the solder joint (B1) x 2 of Lift motor.
2. Remove the screw (B2) x 1 pc., and remove the lift motor.

Note:
Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

How to remove the sled motor (See Fig. 11-3.)

1. Remove the stop washer (C1) x 1 pc., and remove the drive gear (C2) x 1 pc.
2. Remove the screws (C3) x 2 pcs.
3. Remove the solder joints (C4) x 2 of flexible PWB and remove the sled motor.

Note:
Take care so that the motor gear is not damaged.
(If the gear is damaged, noise is caused.)

How to remove the magnetic head (See Fig. 11-4.)

1. Remove the screws (D1) x4 which connects the magnetic head to the head relay flexible PWB, remove the spring washers (D2) x 1 and remove the soldering joints (D3) x 2.

Note:
Mount carefully so as not to damage the magnetic head.
(If the gear is damaged, noise is caused.)

How to reinstall the optical pickup unit (See Fig. 11-4.)

1. Remove the screw (E1) x 1 pc.
2. Slowly raise the optical pickup.

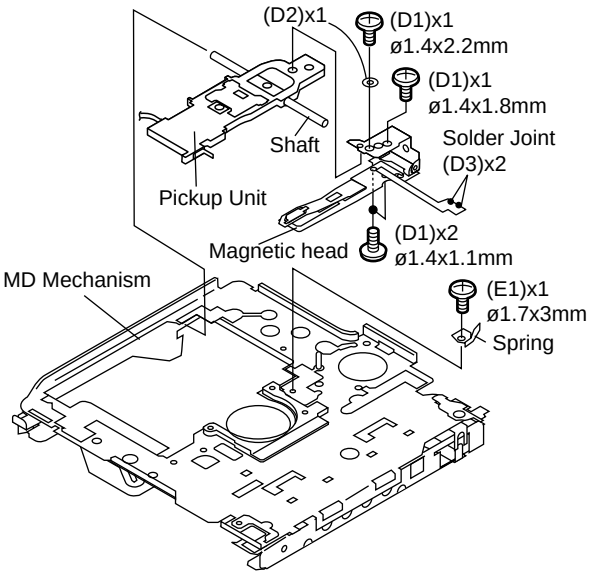


Figure 11-4

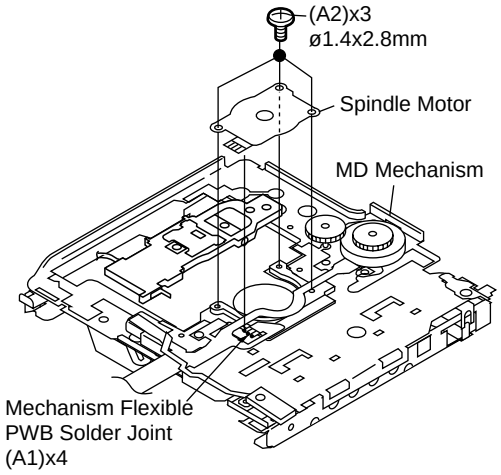


Figure 11-1

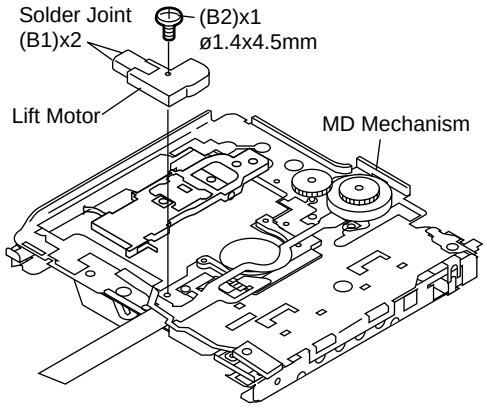


Figure 11-2

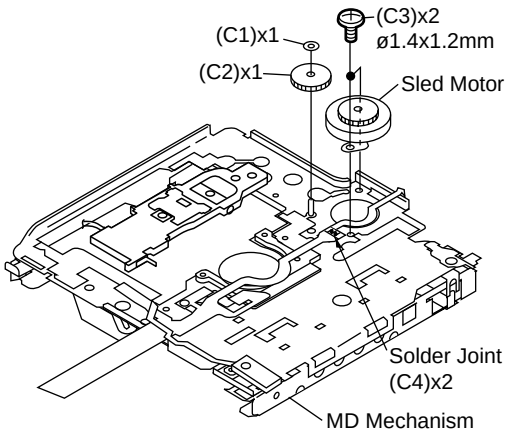


Figure 11-3

ADJUSTMENT

● Test disc

MD adjustment needs two types of disc, namely recording disc (low reflection disc) and playback-only disc (high reflection disc).

	Type	Test disc	Parts No.
1	High reflection disc	MMD-110 (TEAC Test MD)	88GMMD-110
2	Low reflection disc	MMD-213A (TEAC Test MD)	88GMMD-213A
3	Low reflection disc	Recording minidisc	UDSKM0001AFZZ

Note: Use the low reflection disc on which music has been recorded.

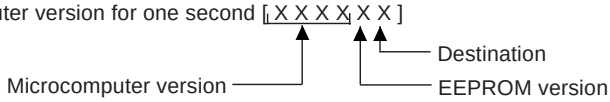
● Entering the TEST mode

1. Setting at port (in standby state, disc-free state or power nonconnected state)

(1) Set the port as follows.
TEST1 : "Low"
TEST0 : "High"
(2) Press the PLAY button in the standby state (it is allowed to insert the disc or to connect the power supply).
(3) Test Mode STOP [T E S T _]

2. Setting by special button operation (in standby state)

Test mode: Perform it with the remote control.
(1) Press and hold the "PLAY MODE" button on the remote control and press the "PLAY" button.
(2) Release only the "PLAY MODE" button.
(3) Press and hold only the "PLAY" button and press the "VOL-" button.
(4) When the EL on the remote control turns on, release the "VOL-" button
*Since the unit is changed to the setting for production line inspection , be sure to set it to the default setting state in the following default setting procedure before returning it to the user.
(5) Normal mode setting initialization (BASS setting, VOL setting, etc.)
(6) Indication of microcomputer version for one second [X X X X X X]



(7) Whole LCD lighting for 2 seconds
(8) Test Mode STOP [T E S T _]
*When the PLAY button is pressed during indication (6) and (7), the process proceeds to (8).

● Leaving the TEST mode

(1) Press the STOP button in the TEST mode stop state or version indicating state or whole LCD lighting state.
(2) EEPROM rewrite-enable area updating, adjustment error setting .
(3) Change to standby state

● Shipping setting method

Press and hold the "VOLUME-DOWN" and "PLAY" buttons on the main unit at the same time, supply power from the DC IN plug [INIT], then stop the power supply from the DC IN plug after the "BYE OK" display disappears.

● Test Mode

1. AUTO 1 Mode	• Perform preliminary automatic adjustment. • If the combination of mechanism and pickup PWB has been changed, be sure to start from AUTO1.
2. AUTO 2 Mode	• Perform ATT (attenuator) automatic adjustment. • Perform continuous playback (error rate display, jump test)
3. TEST-PLAY Mode	• Continuous playback from the specified address is performed. • 1 line, 10 lines or 384 lines manual jump is performed. • C1 error rate display (pit section), ADIP error rate display (groove section) • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous playback.
4. TEST-REC Mode	• Continuous record from the specified address is performed. • Change of record laser output(servo gain is also changed according to laser output). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed during continuous recording.
5. MANUAL 1 Mode	• Temperature is displayed. (Updating in real time) • Seeing the displayed adjustment value, perform preliminary manual adjustment. (Error rate indication, jump test
6. MANUAL 2 Mode	• Temperature is displayed. (Updating in real time) • Seeing the displayed adjustment value perform manfully the preliminary adjustment. (Error rate indication, jump test) • Continuous playback is performed (error rate display, jump test).
7. ERROR INFORMATION Mode	• Error information is displayed. • Error information is initialized
8. NORMAL Mode	• The mode is changed from the TEST mode to the normal mode without adjustment. • In the normal mode the internal operation mode, memory capacity, etc. areindicated. • In the normal mode both temperature correction and posture correction are perfomed.
9. EEPROM Mode	• Factors of digital servo are changed manually. (Each servo is turned on individually.) • Cut-off frequency of BASS1, BASS2 and BASS3 is selected manually. • Temperature detection terminal voltage is measured, and the reference value is set. • Defaults are selected and set. • Setting of EEPROM protect area is updated. (In case of protect releasing)
10. INNER Mode	• Determine the position where the INNER switch is turned on. (only high reflection disc). • The temperature correction is performed only when servo start is performed, but the posture correction is not performed.

● Operation in each TEST mode

1. AUTO1 Mode

- When the STOP button is pressed while the AUTO1 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Be sure to adjust, using the specified disc MMD-212.
  At this time release the EEPROM (IC402) protection. (Refer to EEPROM write procedure.)
- Adjustment NG; Adjustment item out of range, focus ON failure, and adjustment error
- When the PLAY button is pressed while ADJ. OK is displayed, AUTO2 is executed.

2. AUTO2 Mode

- When the STOP button is pressed while the AUTO2 menu appears or during automatic adjustment, the mode changes to the TEST mode stop state. At this time the adjustment value is not output.
- Adjustment NG; Adjustment item out of range, and adjustment error.
- When the PLAY button is pressed while ADJ. OK is displayed,TEST_PLAY is executed.

3. MANUAL1 Mode

- Adjustment item to be made in AUTO1 mode is performed manually.
- When the VOL UP button is pressed during adjustment, the setting increases, and the new setting is output.
- If the VOL DOWN button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOL UP/DOWN button is held down, the setting changes continuously with 100 ms cycle.

*In this operation, the setting change is performed for each digit. The digit is changed by pressing the MODE button.

- If the setting is within the allowable range, the RANDOM display lights.
- When the STOP button is pressed during MANUAL1 MENU or measurement or adjustment, the state is changed to the TEST mode stop state.

4. MANUAL2 Mode

- Adjustment item to be made in AUTO2 mode is performed manually.
- When the VOL UP button is pressed during adjustment, the setting increases, and the new setting is output.
- If the VOL DOWN button is pressed during adjustment, the setting decreases and the new setting is output.
- If the VOL UP/DOWN button is held down, the setting changes continuously with 100 ms cycle.

*In this operation, the setting change is performed for each digit. The digit is changed by pressing the MODE button.

- If the setting is within the allowable range, the RANDOM display lights.
- When the STOP button is pressed during MANUAL2 MENU or measurement or adjustment, the state is changed to the TEST mode stop state.
- When the PLAY button is pressed in B-ATT set state, the mode is changed to the continuous playback mode.
- As for operation during continuous playback refer to "TEST-PLAY mode explanation".

5. TEST-PLAY Mode

- When the STOP button is pressed while the TEST-PLAY menu appears, or in TEST-PLAY or continuous playback mode, the mode changes to the TEST mode stop state.
- When the PLAY button is pressed while the TEST-PLAY menu appears,continuous playback is initiated from the current pickup position.
- Whenever the DISP button is pressed in the TEST-PLAY menu, the target address changes as follows.
  0032 — 03C0 — 0700 — 08A0 — 0950— 0032 —
  When the PLAY button is pressed while a target address is displayed, continuous playback is performed after searching that address.
- Each time the MODE button is pressed while the TEST-PLAY mode target address is displayed, the digit which is changed by pressing the SKIP UP/DOWN button is changed as follows.
  0032 — 0032 — 0032 — 0032 —
- When the SKIP UP button is pressed in the TEST-PLAY mode target address is displayed, the digit of address specified by the MODE button is set to +1h. (0 to F)
- When the SKIP DOWN button is pressed in the TEST-PLAY mode target address is displayed, the digit of address specified by the MODE button is set to -1h. (0 to F)
  * When the SKIP UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- When the BASS button is pressed in the continuous playback mode, the number of jump lines changes as follows.
  1 — 10 — 384 — 1
  * After the number of jump lines is indicated for one second, the address indication is restored. [▲▲▲ T R _]
- When the SKIP UP button is pressed in the continuous playback mode, the specified number of lines is jumped in the FWD direction.
- When the SKIP DOWN button is pressed in the continuous playback mode, the specified number of lines is jumped in the REV direction.
  * When the SKIP UP/DOWN button is held down, jump is repeated every approx. 100 ms.
- Whenever the DISP button is pressed in the continuous playback mode, the indication changes as follows.

  * Pre-mastered disc

  Continuous playback (SUBQ address indication) [S Q □□□□]
  |
  Continuous playback (C1 error indication) [C E ☆☆☆☆]
  |
  Continuous playback (SUBQ address indication) [S Q □□□□]

  * Recordabl disk

  Continuous playback (ADIP address indication) [A P □□□□]
  |
  Continuous playback (C1 error indication) [C E ☆☆☆☆]
  |
  Continuous playback (ADIP error indication) [A E★★★★]
  |
  Continuous playback (ADIP address indication) [A P□□□□]

6. TEST-REC Mode

- When the STOP button is pressed while the TEST-REC menu appears, or in the TEST-REC mode or continuous record mode, the mode changes to the TEST mode stop state.
- When the PLAY button is pressed while the TEST-REC menu appears, the continuous record is initiated from the current pickup position.
- Whenever the DISP button is pressed in the TEST-REC menu, the target address changes as follows.

  0032 — 03C0 — 0700 — 08A0 —0950 — 0032 —

When the PLAY button is pressed while a target address is displayed, continuous playback is performed after searching that address.

- Whenever the MODE button is pressed in the TEST-REC mode target address is displayed, the digit which is changed by the SKIP UP/DOWN button changes as follows.

  0032 — 0032 — 0032 — 0032 —

- When the SKIP UP button s pressed in the TEST-REC mode target address is displayed, the digit of address specified by the BASS button is set to +1h.(0 to F)
- When the SKIP DOWN button is pressed in the TEST-REC mode target address is displayed, the digit of address specified by the BASS button is set to -1h. (0 to F)

  * When the SKIP UP/DOWN button is held down, the setting changes continuously, one cycle being 100 ms.
- When the VOL UP/DOWN button is pressed in the TEST-REC mode or continuous record mode, the laser record power changes. (Servo gain changes also according to record power.)

  * After the laser record power is indicated for one second, the address indication is restored. [R P W _ ▽▽]
- □□□□: Address
- ▽▽ : Laser power cord
- Operation is disabled if the premastered disc or disc is in miserase-protected state.

7. NORMAL Mode

- When the STOP button is pressed while the NORMAL menu appears, the mode changes to the TEST mode stop state.
- Indication during operation

  Indication of memory capacity on main unit LCD [□□ _ ✳✳✳✳ _ ✳✳] + Level meter

  □□ : Internal mode

  ✳✳✳✳ : Address (Cluster section)

  ✳✳ : Address (Sector section)
- Selection of sound volume, BASS, etc. is possible (without indication)
- Recording is also possible.
- If the STOP button is pressed during operation in the NORMAL mode, the NORMAL mode is canceled, and the power is turned off.

8. Error data display Mode

- Reversing when SKIP DOWN button is pressed
- When the STOP button is pressed while the error data indication menu appears or during error data indication, the mode changes to the TEST mode stop state.
- Error data 0 is the latest error.
- Error which occurred in the TEST mode is also stored in the memory.
- When the DISP button is pressed while the error data indication menu appears, the error data is initialized. [C L E A R _]
- ◇◇: Error Code

● Explanation of error history code

13h : Adjustment servo retraction excessive retrial
16h : C. IN detection time-over
17h : A, B, E, F, and TCRSO offset measurement value out of tolerable range
21h : Focus retraction completion allowable time-over
23h : Track search completion allowable time-over
32h : P-TOC read failure
42h : U-TOC read failure
44h : U-TOC write data write disabled/read check error
45h : U-TOC write test failure
52h : SD write data write disabled
71h : Pickup position initialization time-over
72h : EEPROM data read check sum error
73h : Record head drive disabled (by EJECT lever)
82h : Power overvoltage detection
91h : Ambient temperature is higher that the allowable temperature.

9. INNER Mode

- when the STOP button is pressed on the INNER menu (SQ□□□□), the state is changed to the TEST mode STOP state.
- □□□□ : Address

EEPROM (IC402) writing procedure

1. Procedure to replace EEPROM and write initial value of microcomputer in EEPROM

(1) Replace EEPROM.
(2) Refer to the latest EEPROM data list.
(3) Start the test mode. (Refer to "How to enter the test mode".)
(4) Version display

[V e r . ✳✳✳✳✳✳]

EEPROM version (C ~ Z)
Microcomputer ROM version

(5) The whole LCD lights.
(6) Test mode stop state.

[T E S T]

(7) Press the "BASS" button, and press twice the "SKIP DOWN" button.

[E E P R O M]

(8) Perform the operation to display "EEPROM SETTING MODE CHART", compare the EEPROM DATA LIST with the display, and set according to the EEPROM DATA LIST with the VOL UP or VOL DOWN key.
(9) Set the temperature reference. (Refer to the Temperature Reference Setting Method.)
(10) Set according to the EEPROM DATA LIST.
(11) Press the Stop button.

[T E S T]

(12) Press the Stop button.
(13) After data is written in EEPROM, turn off power .

2. Temperature reference setting method

[1] Measurement, calculation and setting procedure

(1) Set the TEST mode.
• Set TEST 1, 0 = '01', and turn on power (or set PLAY ON in standby state).
(2) Start the EEPROM mode 'Temp' menu.
• Key operation in order of BASS, SKIP-DOWN x 2 times, PLAY, PLAY in the test mode STOP state.
• 'TM$$%%' is displayed. ($$= Temperature code, %% = Temperature reference)
(3) Once press SKIP-UP, and determine the displayed microcomputer TEMP input AD value.
• 'TPin##' is displayed. (## = TEMP input AD value)
(4) At the ambient temperature, determine the temperature corrected value from the temperature measurement value correction table.
(5) Determine the temperature reference, using the following formula.
• Temperature reference = Microcomputer TEMP input AD value + Temperature corrected value
(6) Set the temperature reference value by button operation , and check whether the temperature code indication corresponds to "Temperature Code Identification Table".

[2] Temperature measurement value correction table

Ambient temperature	Temperature correction	Center temperature
+ 9°C ~ +11°C	- 05h	+ 10.0°C
+12°C ~ +14°C	- 04h	+ 12.7°C
+15°C ~ +16°C	- 03h	+ 15.4°C
+17°C ~ +19°C	- 02h	+ 18.2°C
+20°C ~ +22°C	- 01h	+ 20.9°C
+23°C ~ +24°C	± 00h	+ 23.6°C
+25°C ~ +27°C	+ 01h	+ 26.3°C
+28°C ~ +30°C	+ 02h	+ 29.0°C
+31°C ~ +33°C	+ 03h	+ 31.8°C

Ambient temperature	Temperature correction	Center temperature
- 9°C ~ +10°C	08h	+ 0.5°C
+ 3°C ~ +21°C	07h	+ 12.5°C
+15°C ~ +33°C	06h	+ 23.6°C
+26°C ~ +43°C	05h	+ 35.0°C

● EEPROM DATA LIST (EEPROM version c)

Fucus setting

Item display	Set values
FG1_ ○○	20H
FG2_ ○○	31H
FF0_ ○○	10H
FF1_ ○○	70H
FF2_ ○○	E8H
Ff0_ ○○	10H
Ff1_ ○○	40H
Ff2_ ○○	E8H
FZH_ ○○	EDH
FLn_ ○○	0AH
FLp_ ○○	07H
DjG_ ○○	0DH
FSS_ ○○	1CH
FTS_ ○○	18H
FSB_ ○○	30H
FTB_ ○○	28H
FGM_ ○○	66H

Tracking setting

Item display	Set values
TG1_ ○○	18H
TG2_ ○○	1FH
TF0_ ○○	10H
TF1_ ○○	70H
TF2_ ○○	E0H
Tf0_ ○○	10H
Tf1_ ○○	40H
Tf2_ ○○	E0H
TFS_ ○○	00H
TBo_ ○○	2BH
TBt_ ○○	14H
TKo_ ○○	2BH
TKt_ ○○	12H
TDo_ ○○	67H
TDt_ ○○	34H
SCo_ ○○	00H
SCt_ ○○	1AH
SCm_ ○○	53H
CLp_ ○○	24H
CLr_ ○○	3CH
JPI_ ○○	06H
K10_ ○○	65H
THP_ ○○	02H
THG_ ○○	02H
TOP_ ○○	00H
TOG_ ○○	F8H
T1P_ ○○	20H

Spindle setting

Item display	Set values
SPG_ ○○	14H
SPi_ ○○	4AH
SPm_ ○○	29H
SPo_ ○○	1FH
PGM_ ○○	E0H
SP1_ ○○	10H
SP2_ ○○	60H
SP3_ ○○	F2H
SP4_ ○○	F2H
SP5_ ○○	10H
Sp2_ ○○	60H
Sp5_ ○○	10H
SD1_ ○○	78H
SD2_ ○○	7FH
SPK_ ○○	6BH
MPG_ ○○	48H

Sled setting

Item display	Set values
SLG_ ○○	80H
SL2_ ○○	50H
SLM_ ○○	6AH
SKk_ ○○	48H
SKt_ ○○	4AH
SKm_ ○○	4DH
WTm_ ○○	24H
SBT_ ○○	0AH
SBL_ ○○	48H
MV1_ ○○	00H
MV2_ ○○	FAH
SLV_ ○○	28H
SIi_ ○○	29H
SIm_ ○○	49H
SIo_ ○○	59H
SIx_ ○○	AAH
SLT_ ○○	43H
MMV_ ○○	00H
SLP_ ○○	4AH

BASS setting

Item display	Set values
B1A_ ○○	3FH
B1B_ ○○	00H
B1C_ ○○	00H
B2A_ ○○	1FH
B2B_ ○○	00H
B2C_ ○○	00H
B3A_ ○○	E2H
B3B_ ○○	00H
B3C_ ○○	00H

ADJ. SET setting

Item display	Set values
COK_ ○○	38H
FAT_ ○○	C0H
TAT_ ○○	3EH
CAT_ ○○	40H
FAB_ ○○	E0H

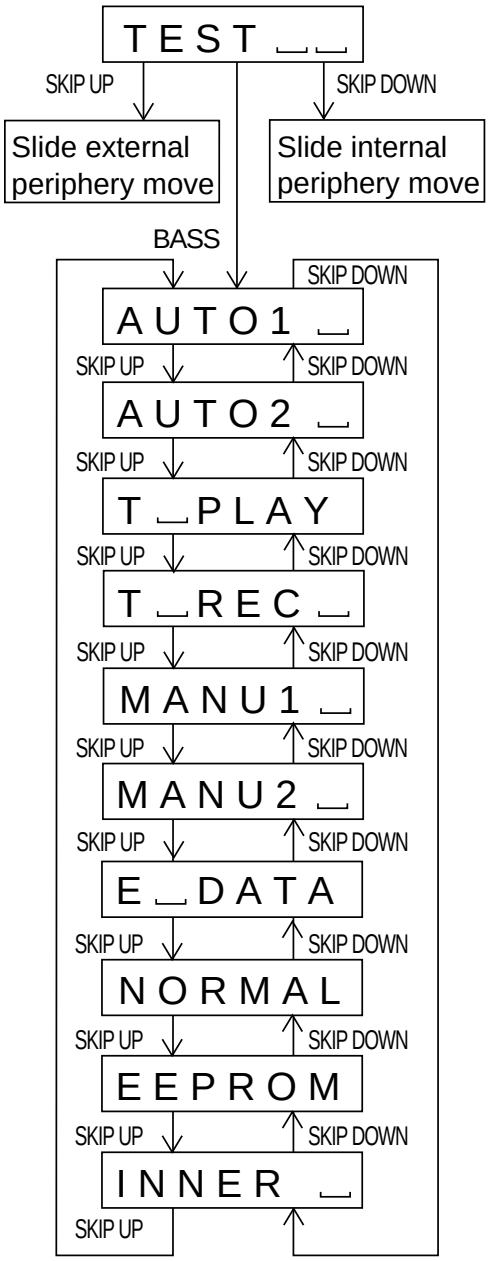
TEMP setting

Item display	Set values
TM_ ○○	Calculate values

Control setting

Item display	Set values
CT0_ ○○	02H
CT1_ ○○	15H
CT2_ ○○	18H
CT3_ ○○	31H
RC0_ ○○	C0H
RC1_ ○○	FEH
SYC_ ○○	A6H
PWC_ ○○	12H
PWL_ ○○	26H
DR1_ ○○	09H
DR2_ ○○	47H
IN1_ ○○	54H
IN2_ ○○	9DH
INH_ ○○	64H
DRH_ ○○	74H
PLE_ ○○	A6H
RCE_ ○○	94H
ELT_ ○○	A0H
X2T_ ○○	C0H
SDF_ ○○	1FH
CHV_ ○○	0CH
SGP_ ○○	B0H
S2P_ ○○	40H
SRT_ ○○	0AH
ST0_ ○○	73H
ST1_ ○○	73H
ST2_ ○○	73H
ST3_ ○○	73H
ST4_ ○○	7AH
ST5_ ○○	80H
ST6_ ○○	80H
ST7_ ○○	80H
ST8_ ○○	86H
ST9_ ○○	8DH
STA_ ○○	8DH
KC0_ ○○	06H
KC1_ ○○	09H
KC2_ ○○	0DH
KC3_ ○○	0FH
KC4_ ○○	11H
KC5_ ○○	12H
KC6_ ○○	16H
KC7_ ○○	17H
KC8_ ○○	1AH
KC9_ ○○	1FH
KCA_ ○○	1FH

Test Mode Change Chart
Tset Mode Menu



: Test Mode STOP

: Pre-auto adjustment menu

: ATT auto adjustment menu

: Pre-manual adjustment menu

: ATT manual adjustment menu

: Pre-adjustment value check menu

: ATT adjustment value check menu

: Digital input signal monitor menu

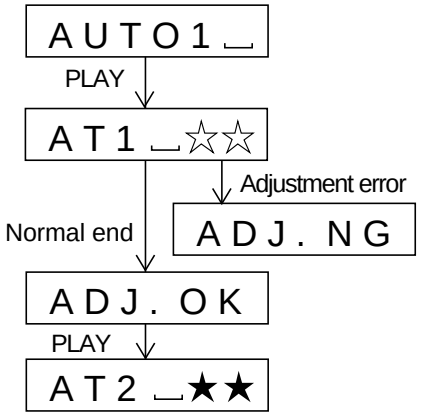
: Error history display menu

: EEPROM setting menu

: INNER switch position measurement menu

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [PLAY] button operation is performed in the specific menu, the operation of this menu is executed.

Preautomatic Adjustment



: Preautomatic Adjustment menu

: During preadjustment adjustment

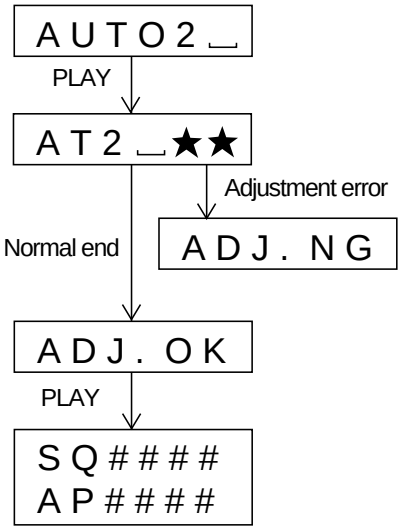
: Preadjustment error (adjustment value output)

: Preadjustment normal end (adjustment value output)

: During ATT automatic adjustment

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* "☆☆" represent the adjustment number as follows.
  - 0 0 : Innermost periphery move
  - 0 2 : ABEF offset tentative measurement
  - 0 4 : RF side focus gain coarse adjustment
  - 0 5 : Focus ATT tentative setting
  - 0 6 : RF side bit section tracking gain adjustment
  - 0 7 : COUT level setting for pit section adjustment
  - 0 8 : External periphery move
  - 0 9 : RF side groove section tracking gain adjustment
  - 1 0 : COUT level setting for groove section adjustment
  - 1 1 : RF side TCRS gain adjustment
  - 1 2 : Tracking ATT initial setting
  - 1 3 : RF side focus gain minor adjustment
  - 1 4 : Focus ATT initial setting
  - 1 5 : S gain "High" ABEF offset measurement
  - 1 6 : TCRS offset measurement
  - 1 7 : S gain "Low" ABEF offset measurement

ATT Auto Adjustment



: ATT Autoadjustment menu

: During ATT autoadjustment

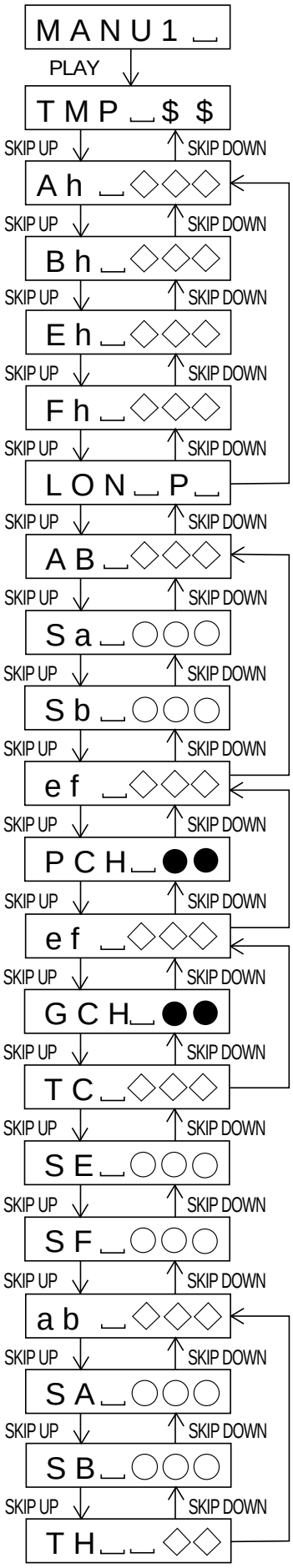
: ATT adjustment error (adjustment value output)

: ATT adjustment normal end (adjustment value output)

: Continuous playback (high reflection)
: Continuous playback (low reflection)

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* "★★" represent the adjustment number as follows.
  - 0 0 : Innermost periphery move
  - 0 3 : Pit section tracking ATT setting
  - 0 4 : Pit section focus ATT setting
  - 0 6 : External periphery move (low reflection only)
  - 0 7 : TCRS ATT setting (low reflection only)
  - 0 8 : Groove section tracking ATT setting (low reflection only)
  - 0 9 : Groove section focus ATT setting (low reflection only)

Pre-Manual Adjustment



: Pre-Manual Adjustment menu

: Temperature code display
$ $: Temperature code

: A signal offset (AINO) tentative measurement
◇◇◇: Measurement value

: B signal offset (BINO) tentative measurement
◇◇◇: Measurement value

: E signal offset (EINO) tentative measurement
◇◇◇: Measurement value

: F signal offset (FINO) tentative measurement
◇◇◇: Measurement value

: Laser ON (Play Power)

: AB MAXO measurement
◇◇◇ : Measurement value

: A-ATT (focus) tentative setting
○○○ : ATT setting

: B-ATT (focus) tentative setting
○○○ : ATT setting

: Bit section LPFEFO measurement
◇◇◇ : Measurement value

: Pit section adjustment COUT level setting
●● : COUT level setting

: Group section LPFEFO measurement
◇◇◇ : Measurement value

: Groove section adjustment COUT level setting
●● : COUT level setting

: TCRSMIO measurement
◇◇◇ : Measurement value

: E-ATT (tracking) initial setting
○○○: ATT setting

: F-ATT (tracking) initial setting
○○○ : ATT setting

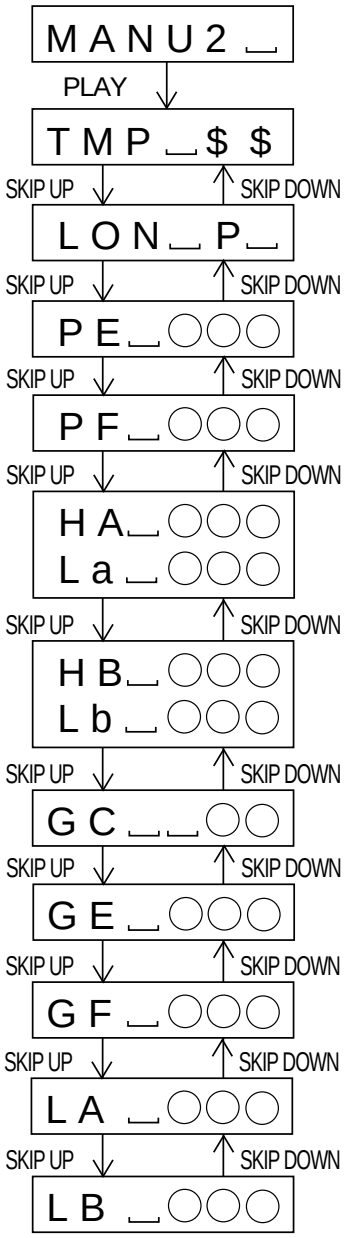
: LPFABO measurement
◇◇◇ : Measurement value

: A-ATT (focus) initial setting
: ATT setting

: B-ATT (focus) initial setting
○○○ : ATT setting

: TCRS signal offset (TCRSO) measurement
◇◇ : Measurement value

ATT Manual Adjustment



: ATT manual adjustment menu

: Temperature code display
$ $: Temperature code

: Laser ON (Play Power)

: Pit section E-ATT (tracking) setting
○○○ : ATT setting

: Pit section F-ATT (tracking) setting
○○○ : ATT setting

: High reflection: A-ATT (focus) setting
: Low reflection: A-ATT (focus) setting
○○○ : ATT setting

: High reflection: B-ATT (focus) setting
: Low reflection: B-ATT (focus) setting
○○○ : ATT setting

: TCRS ATT setting
○○ : ATT setting

:Groove section E-ATT (tracking) setting
○○○ : ATT setting

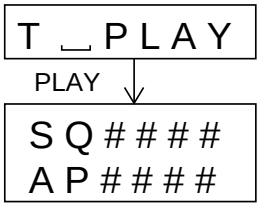
:Groove section F-ATT (tracking) setting
○○○ : ATT setting

: Low reflection: A-ATT (focus) setting
○○○ : ATT setting

: Low reflection: B-ATT (focus) setting
○○○ : ATT setting

Continuous Playback

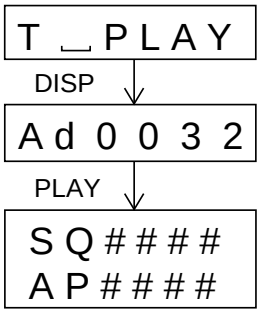
• Continuous playback from current pickup position



: Continuous playback menu

: Continuous playback (pit section)
: Continuous playback (groove section)
: Address

• Continuous playback from any address

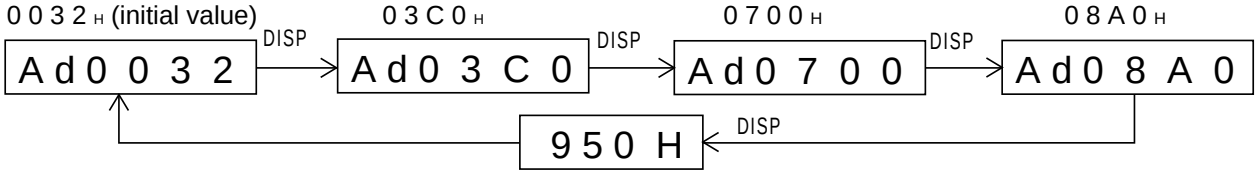


: Continuous playback menu

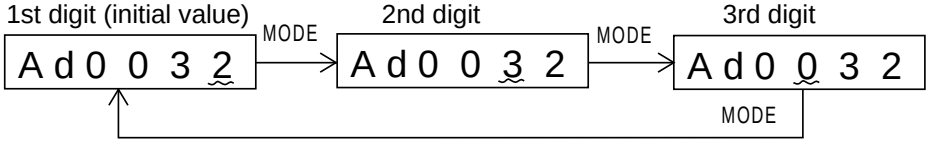
: Start address setting

: Continuous playback (pit section)
: Continuous playback (groove section)
: Address

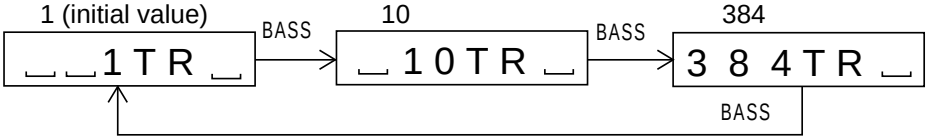
* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* In the start address set state the start address changes as follows when the [DISP] button is pressed.



* In the start address setting state the start address change digit changes when the [MODE] button is pressed.



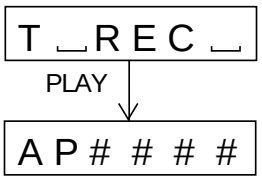
* In the start address set state the value of selection digit changes in the range of "0h to Fh" when the [SKIP UP/DOWN] button is pressed
* In the continuous playback state the number of jump lines changes as follows shown the [BASS] button is pressed.



* When the [SKIP UP] button is pressed in the continued playback mode, jump of specified number of lines occurs in the external periphery direction.
  If the key is held down jump occurs continuously (100 ms cycle).
* When the [SKIP DOWN] button is pressed in the continuous playback mode, jump of specified number of lines occurs in the internal periphery direction.
  If the key is held down, jump occurs continuously (100 ms cycle).

Continuous Rrecord

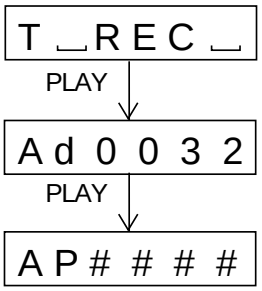
• Continuous record from the current pickup position



: Continuous record menu

: Continuous record
#: Address

• Continuous record playback from any address

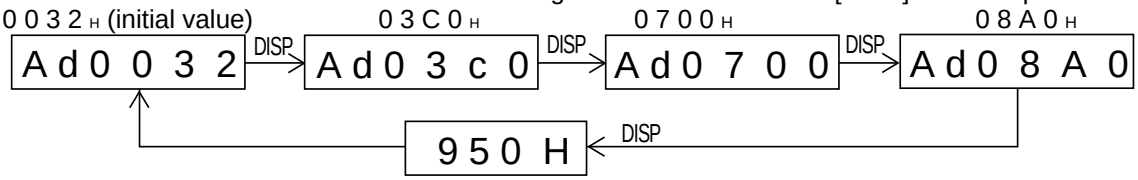


: Continuous record menu

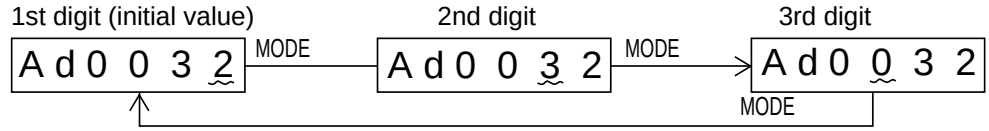
: Start address setting

: Continuous record
#: Address

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* In the start address set state the start address changes as follows when the [DISP] button is pressed.

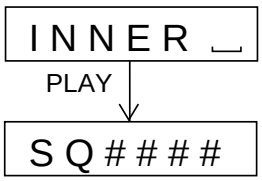


* In the start address setting state the start address change digit changes when the [MODE] button is pressed.



* In the start address set state the value of selection digit changes in the range of 0h to Fh when the [SKIP UP/DOWN] button is pressed.
* In the continuous record state and start address set state the record laser power changes in the range of "0h to Fh" when the [VOL UP/DOWN] button is pressed.

Inner Switch Position Measurement

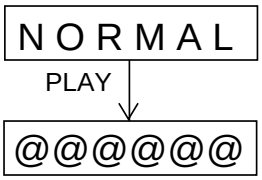


: INNER switch position measurement menu

: Continuous playback (pit section)
: Address

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

Test Mode Normal Playback



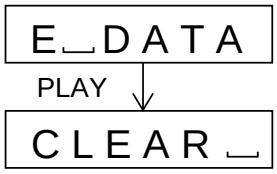
: TEST mode normal playback menu

: Continuous playback
@@@@@@: Mode and address display

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the NORMAL mode is canceled, the power is turned off.

Error History Display

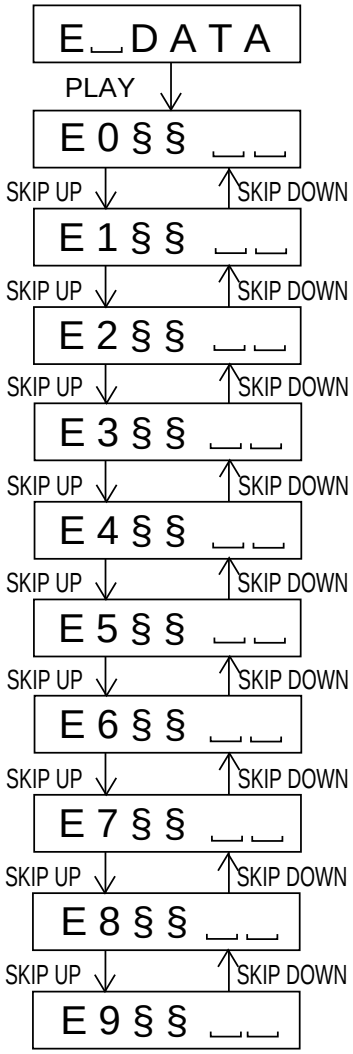
• Error history clear



: Error history display menu

: Error history clear

• Error history display



: Error history display menu

: Error history 0 display
§ § : Error code

: Error history 1 display
§ § : Error code

: Error history 2 display
§ § : Error code

: Error history 3 display
§ § : Error code

: Error history 4 display
§ § : Error code

: Error history 5 display
§ § : Error code

: Error history 6 display
§ § : Error code

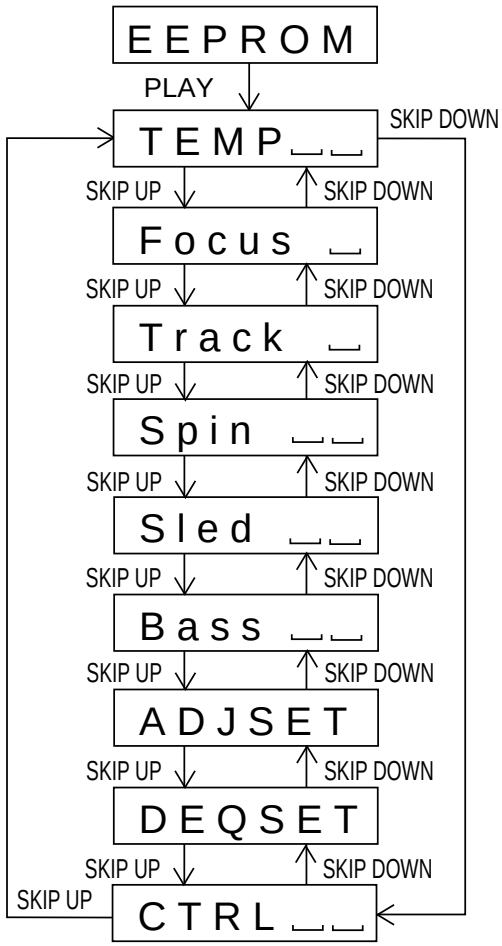
: Error history 7 display
§ § : Error code

: Error history 8 display
§ § : Error code

: Error history 9 display
§ § : Error code

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.

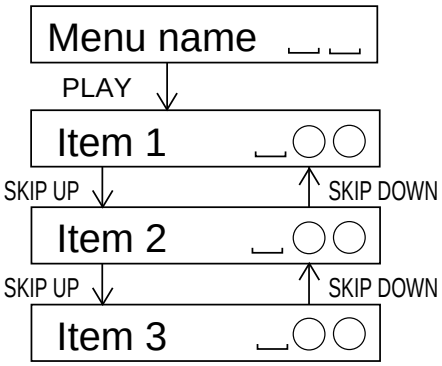
EEPROM Setting



: EEPROM setting menu
: TEMP setting menu
: Focus setting menu
: Tracking setting menu
: Spin setting menu
: Sled setting menu
: BASS setting menu
: Adjustment setting menu
: Digital EQ setting menu
: Control setting menu

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [PLAY] button operation is performed in the specific state, the specific setting menu is set.

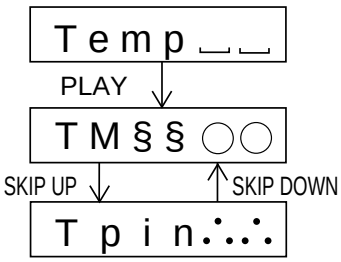
Setup operation except for TEMP



: Each setting menu

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [DISP] button operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
* In the specific state the setting changes in the range of "00h to FFh" when the [VOL UP/DOWN] button is pressed. (The upper limit varies depending on the items)
* When the [MODE] button is pressed in each state, the set digit is changed.

TEMP Setting



: Temp setting menu

: TEMP reference
○○: Reference
§ § : Temperature code

: TEMP A/D input value
∴∴ : Measurement value

* When the [STOP] button is pressed in specific menu, the "TEST MODE STOP" state is set.
* When the [DISP] button operation is performed in the specific state, the menu changes to "TEMP SETTING menu".
* In the specific state the setting changes in the range of "00h to FFh" when the [VOL UP/DOWN] button is pressed.
* When the [MODE] button is pressed in each state, the set digit is changed.

MD ERROR MESSAGE DISPLAY CONTENT LIST

Display content (Remote control)	Error content	Error code	Remarks
'Can' tREAD*' ('Can' tS')	Focus lead-in processing time over Track search processing time over	30: DISC ERR R 31: DISC ERR S 32: DISC ERR W	* indicates the detailed factor. f: Focus error r: READ ERR s: Search time over w: SD write time over
'Er-MD80' ('Er-MD80')	EEPROM readout Check sum error	80: EEPROM ERR	
Er-MD81	Wrong combination of PWB and mechanism	81: Mismatch of mechanism and PWB	
'Er-MD**' ('Er-MD**')	Loading mechanism operation error	10: MECHA ERR 3E fall 11: MECHA ERR 3M 12: MECHA ERR 3L 20: MECHA ERR 2E rise 21: MECHA ERR 2M 23: MECHA ERR 2D F1: MECHA ERR 1M EJECT F2: MECHA ERR 1L F3: MECHA ERR 1D	** indicates the operation state. (Error code) 3*: Recording head fall 2*: Recording head rise 1*: EJECT
'Can' tREAD*' ('Can' tT')	Readout of the P-TOC information is not completed.	F8: FOCUS ERROR EJECT operation F9: TOC ERR S EJECT operation FA: TOC ERR R EJECT operation	** indicates the detailed factor. a: Servo adjustment error f: Focus error s: Search time over r: READ ERR
'Er-MD41' ('Er-MD41')	Judged it abnormal by the U-TOC write test.	41: TOC W ERR	** is an error number.
'Can' tREAD*' ('Can tU')	Readout of the U-TOC information is not completed.	MD DATA byte 18 bit 5=1 (Only UTOC ERR R ALL ERASE is possible.)	* indicates the detailed factor. u: UTOC READ ERR
TOC FORM**	Abnormal data DISC detection	C0: UTOC ERR L0 C1: UTOC ERR L1 C2: UTOC ERR L2 C4: UTOC ERR L4 DO: UTOC ERR A FD: TOC ERR T EJECT operation	* indicates the detailed factor. L*: Loop a_: Address error t_: FTNO > LTNO

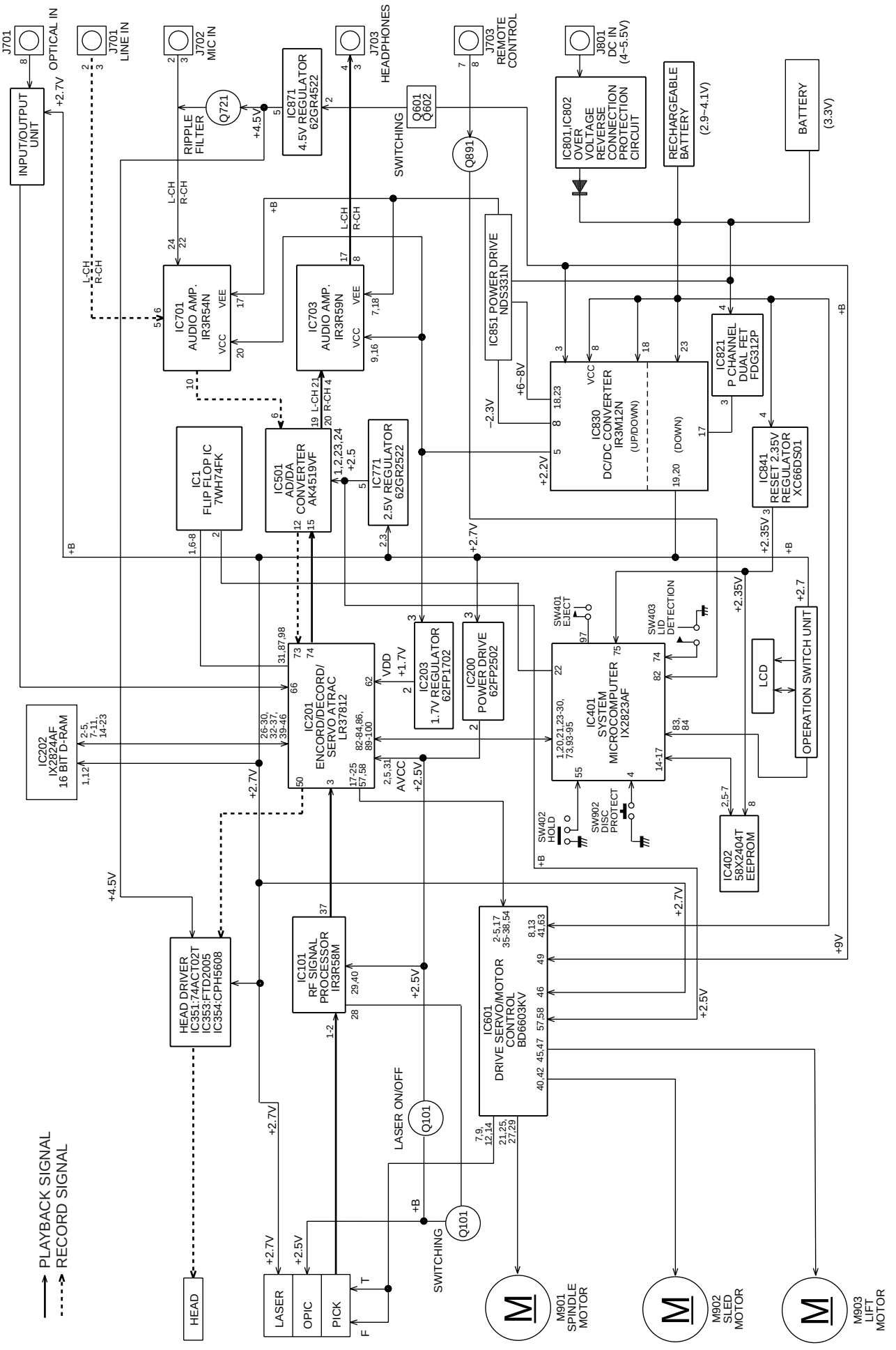
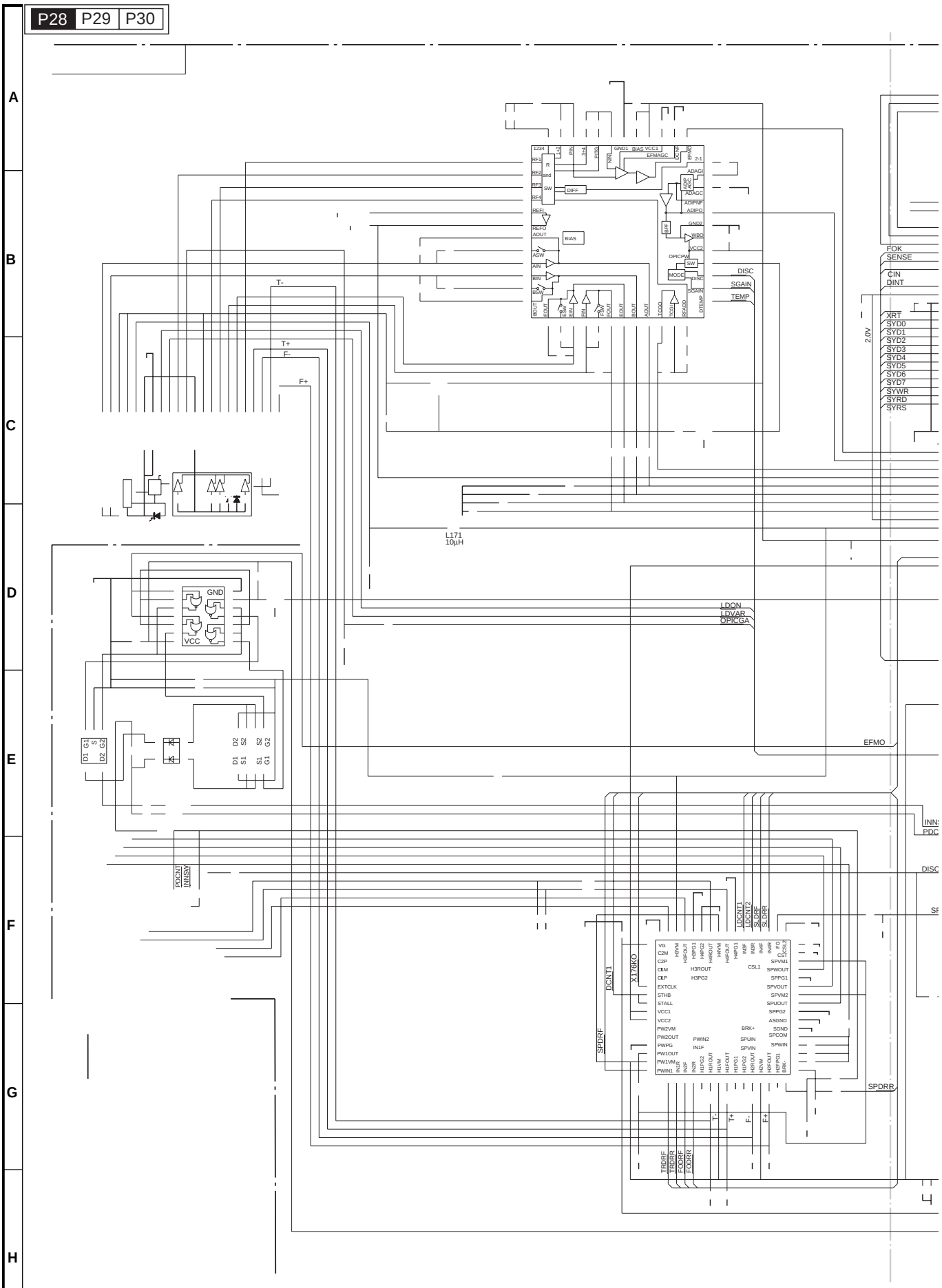


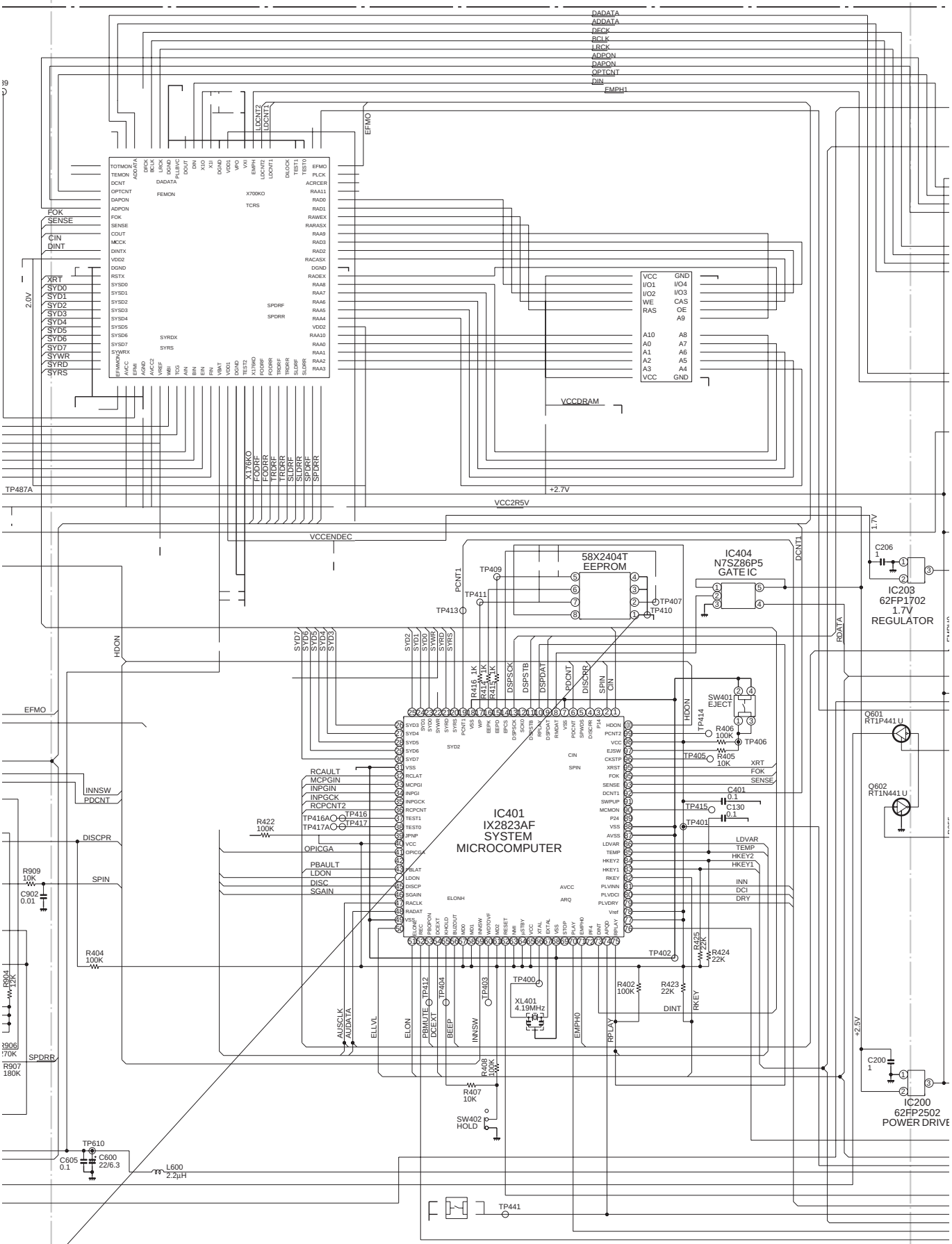
Figure 27 BLOCK DIAGRAM



• NOTES ON SCHEMATIC DIAGRAM can be found on page 36.

Figure 28 SCHEMATIC DIAGRAM (1/3)

P28 P29 P30



• The numbers ❶ to ⓲ are waveform numbers shown in page 35.

7	8	9	10	11	12

Figure 29 SCHEMATIC DIAGRAM (2/3)

VOLTAGE

IC101

PIN NO.	VOLTAGE
1	0.27V
2	0.27V
3	0.27V
4	0.27V
5	1.26V
6	1.26V
7	1.26V
8	1.26V
9	1.26V
10	1.26V
11	1.26V
12	1.26V
13	1.26V
14	1.26V
15	1.26V
16	1.26V
17	1.26V
18	1.26V
19	1.26V
20	1.26V
21	1.26V
22	1.26V
23	1.26V
24	0.27V
25	1.48V
26	–
27	–
28	2.50V
29	2.50V
30	1.55V
31	–
32	1.26V
33	1.26V
34	0.23V
35	1.26V
36	1.26V
37	1.27V
38	1.27V
39	0.25V
40	2.50V
41	1.50V
42	–
43	1.26V
44	–
45	0.28V
46	1.26V
47	0.28V
48	0.27V

IC201

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	1.25V	51	0.90V
2	1.25V	52	0.50V
3	–	53	2.00V
4	–	54	1.40V
5	–	55	1.00
6	–	56	2.50V
7	2.50V	57	0.90V
8	–	58	0.90V
9	–	59	0.90V
10	1.27V	60	1.20V
11	2.50V	61	1.20V
12	2.50V	62	1.80V
13	–	63	–
14	2.36V	64	2.10V
15	0.27V	65	1.50V
16	0.27V	66	1.70V
17	0.20V	67	1.0V
18	0.20V	68	1.80V
19	0.32V	69	2.40V
20	0.20V	70	1.60V
21	0.70V	71	1.60V
22	0.70V	72	1.00V
23	2.20V	73	2.40V
24	2.33V	74	1.90V
25	0.36V	75	1.10V
26	0.88V	76	1.26V
27	2.50V	77	–
28	1.27V	78	–
29	–	79	–
30	2.50V	80	2.50V
31	1.26V	81	–
32	1.26V	82	–
33	1.26V	83	–
34	1.26V	84	–
35	1.26V	85	–
36	1.26V	86	1.00V
37	1.26V	87	1.70V
38	1.29V	88	–
39	1.70V	89	0.75V
40	–	90	0.75V
41	–	91	2.70V
42	1.26V	92	1.26V
43	–	93	0.27V
44	–	94	–
45	–	95	1.26V
46	–	96	1.26V
47	–	97	2.50V
48	–	98	–
49	–	99	–
50	–	100	1.25V

IC401

PIN NO.	VOLTAGE	PIN NO.	VOLTAGE
1	2.50V	51	2.20V
2	2.50V	52	2.36V
3	–	53	2.36V
4	2.30V	54	–
5	0.20V	55	–
6	–	56	–
7	–	57	2.36V
8	0.24V	58	2.36V
9	–	59	2.70V
10	2.30V	60	2.36V
11	2.20V	61	2.36V
12	2.00V	62	2.30V
13	2.30V	63	2.36V
14	2.40V	64	2.36V
15	2.36V	65	2.36V
16	–	66	1.07V
17	2.36V	67	1.13V
18	–	68	–
19	2.35V	69	1.17V
20	0.36V	70	2.33V
21	2.33V	71	–
22	2.20V	72	–
23	0.27V	73	2.52V
24	0.11V	74	2.34V
25	0.60V	75	2.28V
26	0.20V	76	0.12V
27	0.20V	77	2.36V
28	0.40V	78	2.36V
29	0.60V	79	–
30	0.44V	80	1.50V
31	–	81	1.40V
32	–	82	2.10V
33	2.10V	83	2.36V
34	2.70V	84	2.36V
35	2.70V	85	1.47V
36	2.36V	86	–
37	2.35V	87	–
38	2.35V	88	–
39	2.34V	89	–
40	2.36V	90	–
41	–	91	–
42	2.36V	92	2.32V
43	2.36V	93	–
44	–	94	2.52V
45	–	95	2.36V
46	–	96	1.18V
47	–	97	2.34V
48	–	98	2.36V
49	–	99	2.36V
50	2.18V	100	–

Preform the measurement on the IC401 pin 37 in the TEST mode with GND short-circuited. (LCD is in "TEST" state.)

IC601

PIN NO.	VOLTAGE
1	0.38V
2	–
3	–
4	–
5	–
6	–
7	–
8	4.60V
9	–
10	–
11	–
12	–
13	4.65V
14	–
15	–
16	0.72V
17	–
18	0.15V
19	0.15V
20	0.15V
21	0.40V
22	–
23	–
24	–
25	0.15V
26	–
27	0.15V
28	–
29	0.15V
30	–
31	0.85V
32	1.80V
33	2.44V
34	2.50V
35	–
36	–
37	–
38	–
39	–
40	–
41	4.74V
42	–
43	–
44	–
45	–
46	0.23V
47	0.05V
48	0.05V
49	4.38V
50	0.20V
51	0.26V
52	0.20V
53	0.30V
54	–
55	–
56	–
57	0.20V
58	0.20V
59	0.20V
60	0.20V
61	–
62	–
63	4.90V
64	–

IC701

PIN NO.	VOLTAGE
1	1.43V
2	–
3	–
4	–
5	1.40V
6	–
7	–
8	1.32V
9	–
10	–
11	–
12	–
13	–
14	–
15	–
16	–
17	–2.2V
18	–
19	–
20	2.14V
21	0.83V
22	–
23	–
24	–

IC830

PIN NO.	VOLTAGE
1	1.25V
2	1.24V
3	2.35V
4	1.22V
5	1.24V
6	1.10V
7	–
8	0.37V
9	–
10	–
11	–
12	–
13	0.86V
14	2.35V
15	–
16	–
17	2.75V
18	4.60V
19	1.21V
20	1.24V
21	1.22V
22	1.24V
23	4.66V
24	0.56V

IC703

PIN NO.	VOLTAGE
1	–
2	–
3	0.47V
4	–
5	–
6	2.14V
7	–2.2V
8	–
9	2.14V
10	–
11	1.08V
12	2.72V
13	2.36V
14	–
15	–
16	2.14V
17	–
18	–2.2V
19	–2.2V
20	–
21	–
22	0.48V
23	–
24	–

IC501

PIN NO.	VOLTAGE
1	2.51V
2	2.51V
3	–
4	–
5	–
6	–
7	–
8	–
9	1V
10	1V
11	1V
12	0.10V
13	–
14	2.51V
15	–
16	–
17	0.18V
18	–
19	0.27V
20	0.36V
21	–
22	–
23	2.51V
24	2.51V

IC202

PIN NO.	VOLTAGE
1	2.70V
2	1.50V
3	1.50V
4	2.50V
5	1.80V
6	–
7	1.00V
8	–
9	0.10V
10	0.50V
11	–
12	2.70V
13	–
14	0.90V
15	0.90V
16	0.90V
17	–
18	1.20V
19	1.00V
20	1.60V
21	1.80V
22	1.40V
23	1.50V
24	–

IC351

PIN NO.	VOLTAGE
1	–
2	–
3	4.41V
4	–
5	–
6	4.41V
7	0.10V
8	–
9	4.40V
10	–
11	1.14V
12	4.41V
13	–
14	0.20V

IC404

PIN NO.	VOLTAGE
1	2.52V
2	0.24V
3	0.10V
4	2.25V
5	2.52V

IC354

PIN NO.	VOLTAGE
1	0.10V
2	0.20V
3	–
4	–
5	–

IC771

PIN NO.	VOLTAGE
1	–
2	2.72V
3	2.72V
4	–
5	2.51V

IC841

PIN NO.	VOLTAGE
1	2.36V
2	–
3	2.36V
4	4.60V
5	–

IC871

PIN NO.	VOLTAGE
1	–
2	10.90V
3	2.36V
4	–
5	4.45V

IC200

PIN NO.	VOLTAGE
1	0V
2	2.5V
3	2.7V

IC821

PIN NO.	VOLTAGE
1	2.77V
2	2.77V
3	2.77V
4	4.66V
5	2.76V
6	2.76V

IC801

PIN NO.	VOLTAGE
1	–
2	0.20V
3	–
4	–
5	0.72V
6	0.72V

IC802

PIN NO.	VOLTAGE
1	5.10V
2	5.10V
3	0.71V
4	–
5	5.10V
6	4.85V

IC402

PIN NO.	VOLTAGE
1	–
2	2.36V
3	–
4	–
5	2.36V
6	–
7	2.36V
8	2.36V

IC353

PIN NO.	VOLTAGE
1	2.72V
2	–
3	–
4	–
5	–
6	–
7	–
8	2.72V

IC2

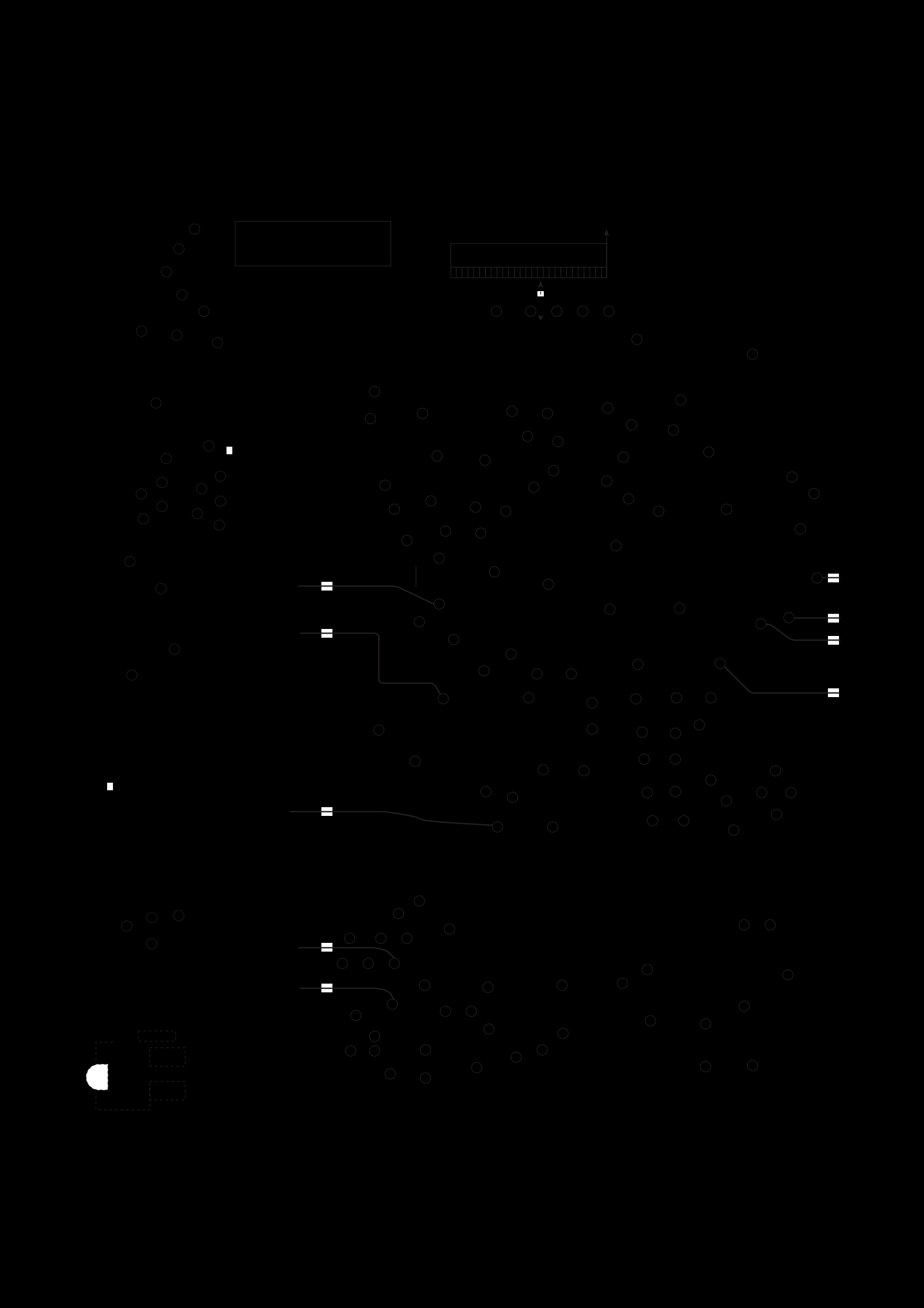
PIN NO.	VOLTAGE
1	1.00V
2	2.20V
3	–
4	–
5	–
6	1.76V
7	1.76V
8	1.76V

IC851

PIN NO.	VOLTAGE
D	4.08V
S	0V
G	0.36V

IC203

PIN NO.	VOLTAGE
1	0V
2	2.0V
3	2.15V



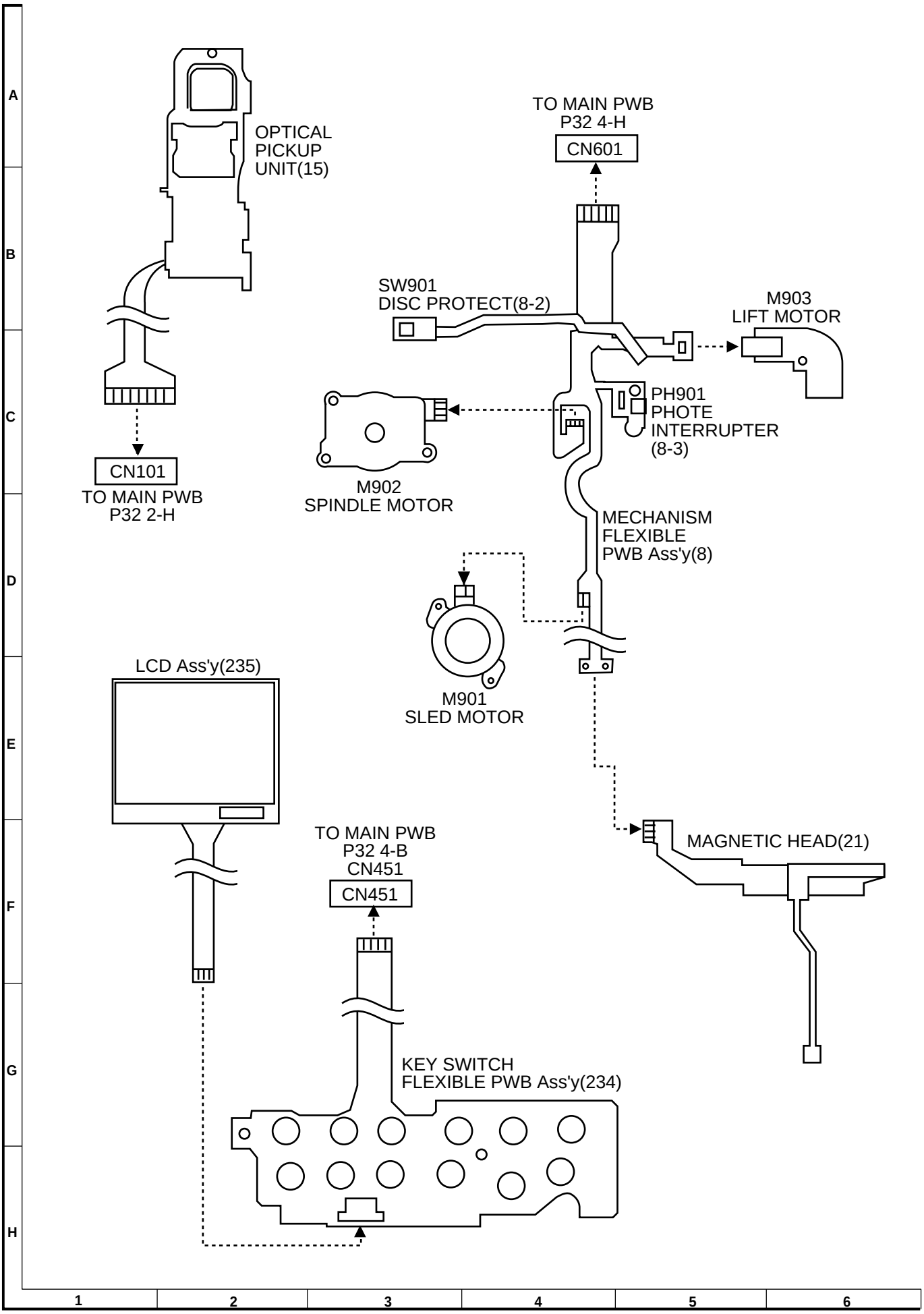
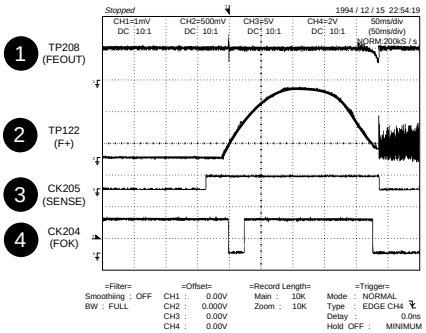
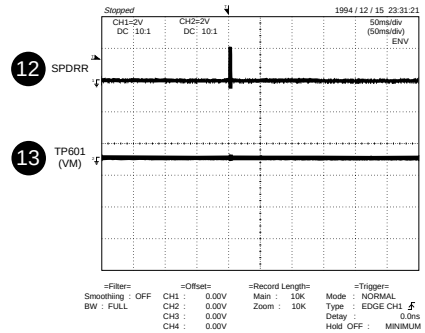
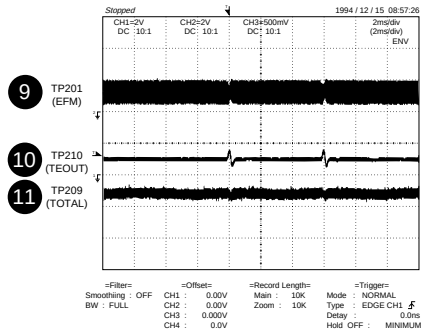


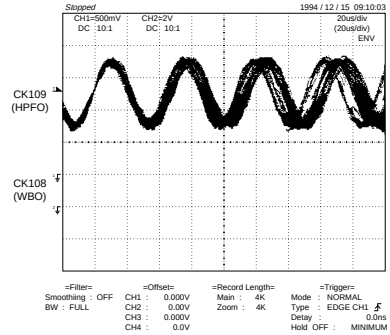
Figure 34 WIRING OF P.W.BOARD (3/3)

WAVEFORMS OF MD CIRCUIT

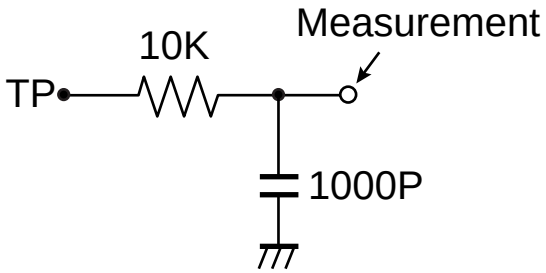








For TP208, TP209, and TP210, use the specific LPF, and observe the waveform.



When watching the EEM monitor (TP201)
Set MSL from 00_H to 80_H with EEPROM control setting. After completion restore 00_H.

NOTES ON SCHEMATIC DIAGRAM

- Resistor:
  To differentiate the units of resistors, such symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is ohm-type resistor. Besides, the one with “Fusible” is a fuse type.
- Capacitor:
  To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression “capacitance/withstand voltage” is used.
  (CH), (TH), (RH), (UJ): Temperature compensation
  (ML): Mylar type

- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.
- Parts marked with “ ⚠ ” (⊏ ニ ニ ニ ⊐) are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW401	EJECT	OFF—ON
SW402	HOLD	OFF—ON
SW403	LID DETECTION	OFF—ON
SW902	DISC PROTECT	OFF—ON

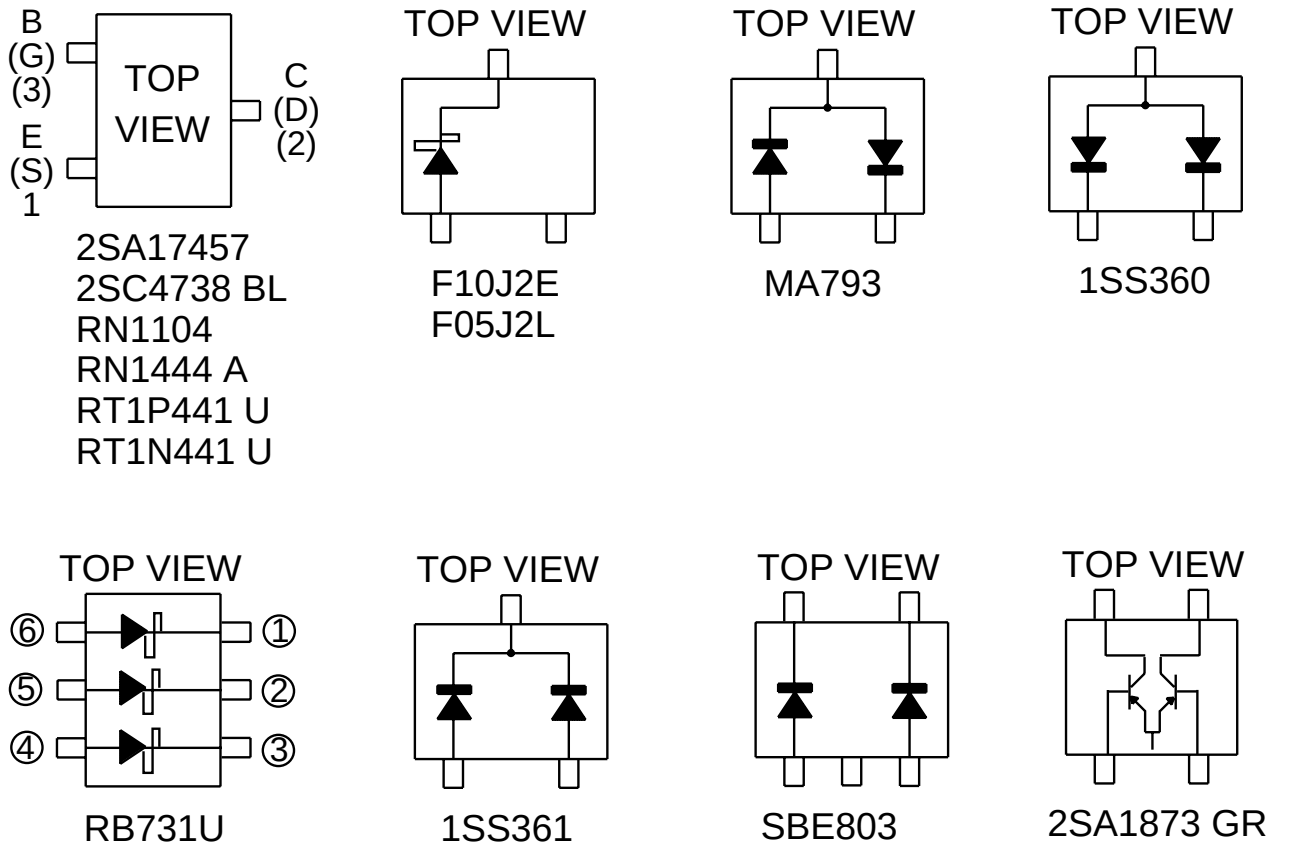


Figure 36 TYPES OF TRANSISTOR AND DIODE

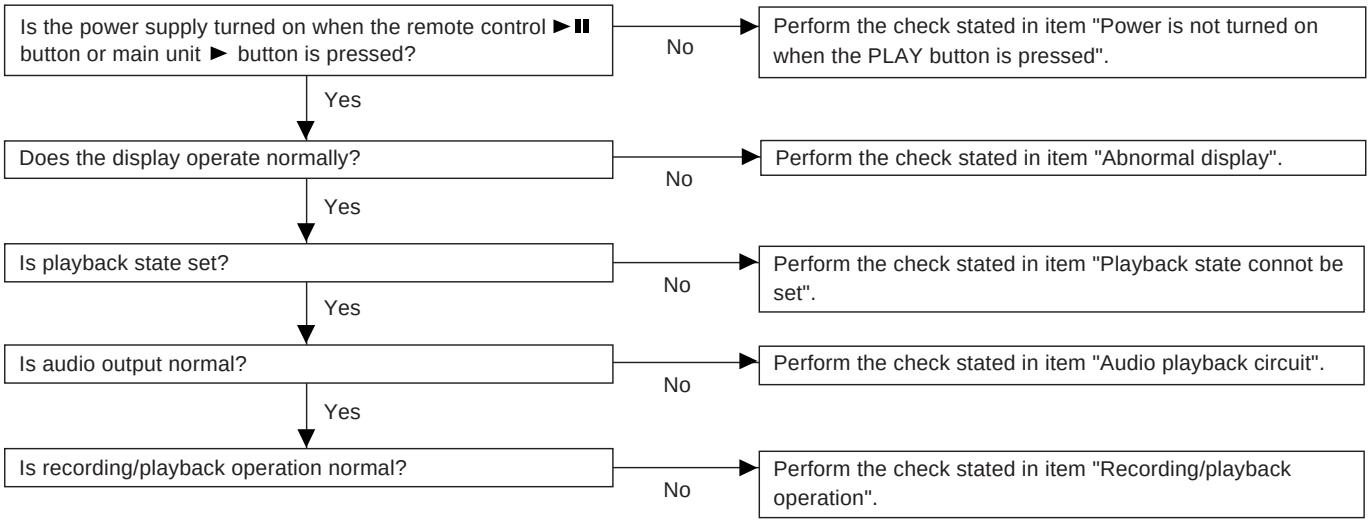
TROUBLE SHOOTING

It is advisable to use the TEST mode (refer to Error Data Display Mode, P14) indicating the causes of troubles before starting repair. Causes of operation errors (up to 10 errors) are recorded as error codes. This information is useful for repair.

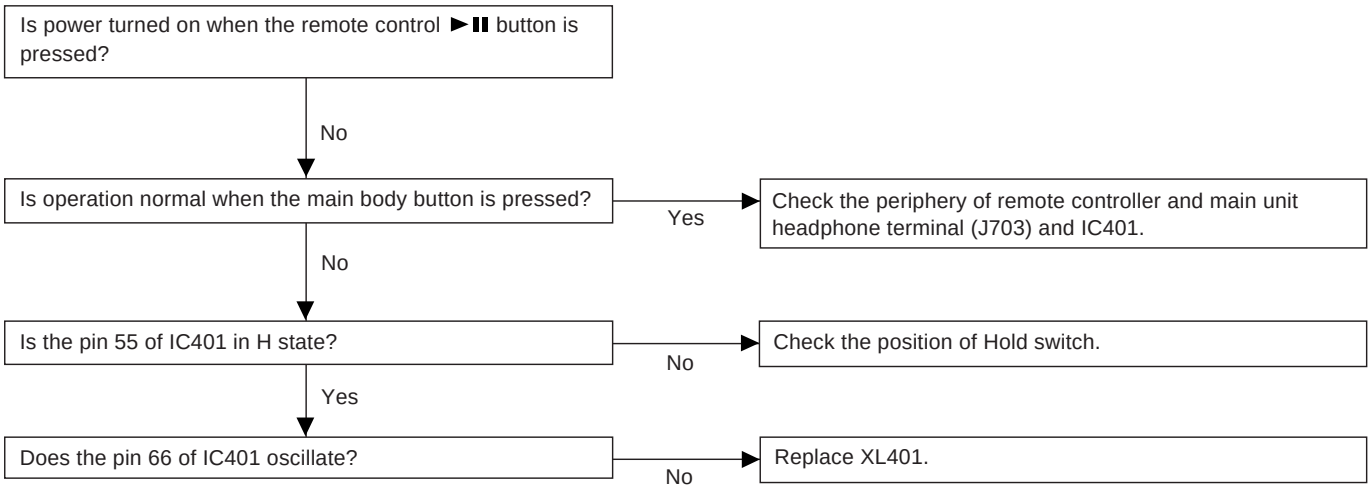
When does not function

When the CD section does not operate When the objective lens of the optical pickup is dirty,this section may not operate.Clean the objective lens,and check the playback operation.When this section does not operate even after the above step is taken,check the following items.
Remove the cabinet and follow the troubleshooting instructions.
"Track skipping and/or no TOC(Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

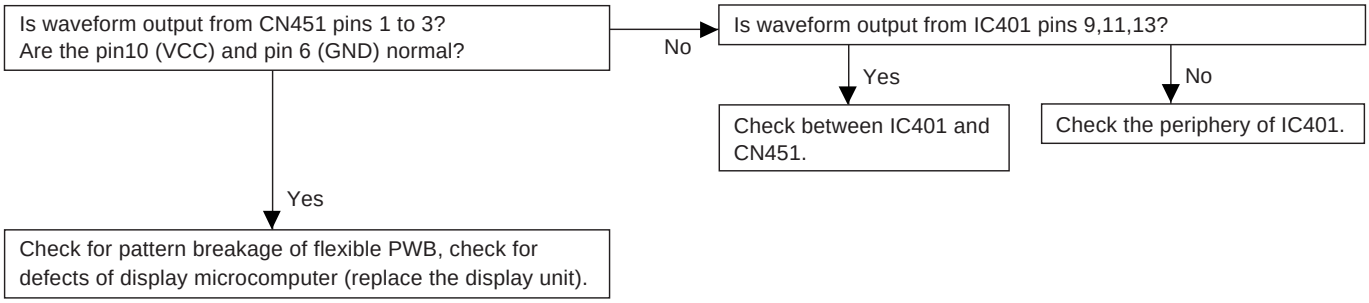
Turn the power off.
Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.
Do not touch the lens with the bare hand.



• Power is not turned on when the► /►II button is pressed.

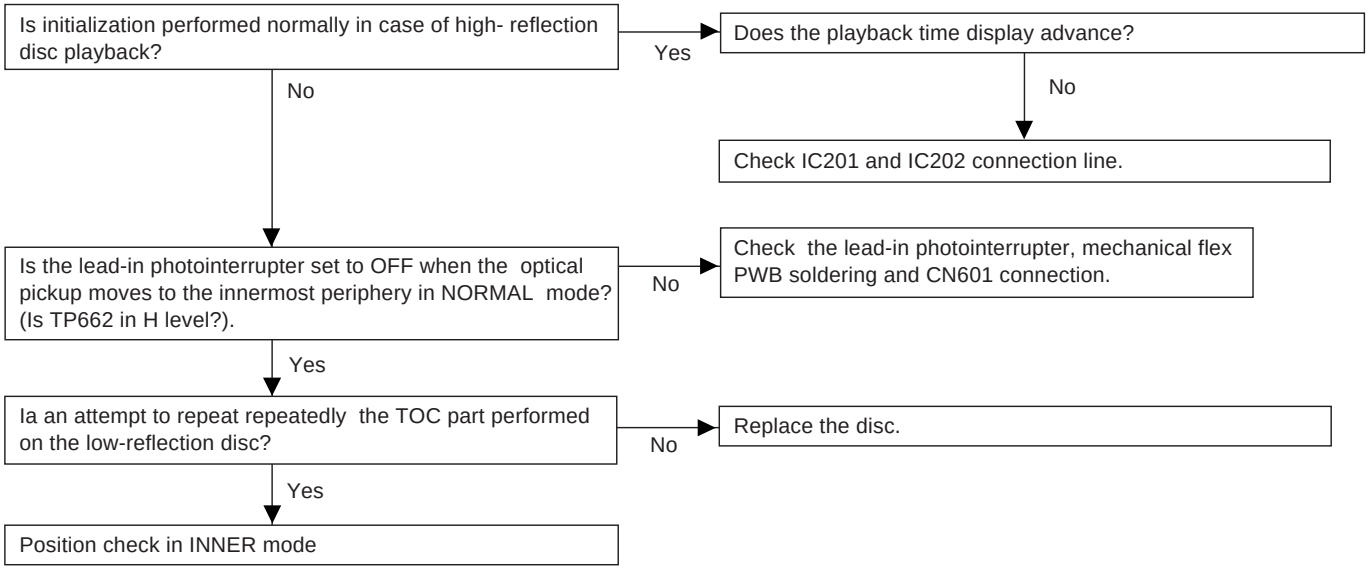


• Abnormal display



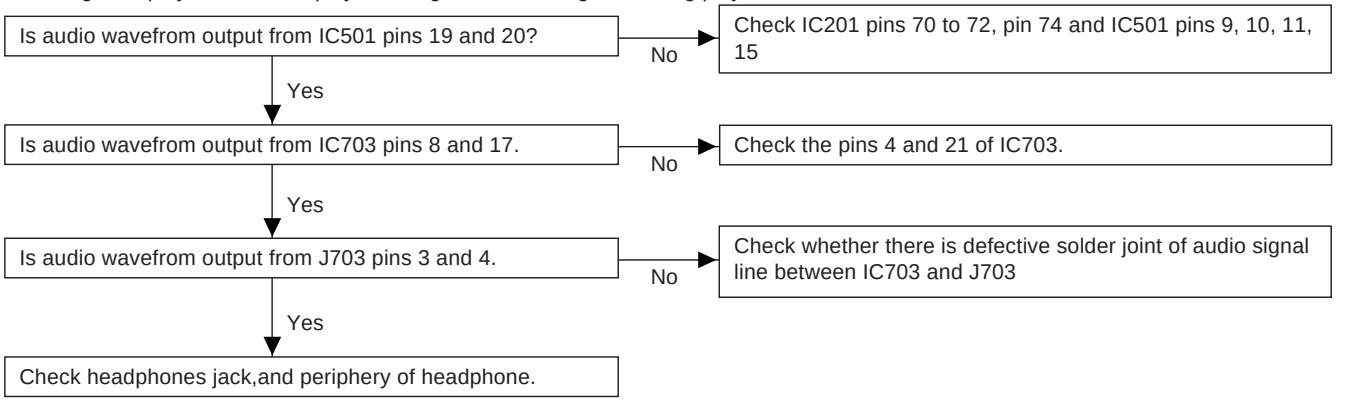
• Playback state cannot be set

When it has been ascertained that the address up to cluster address is normal in the TEST mode.

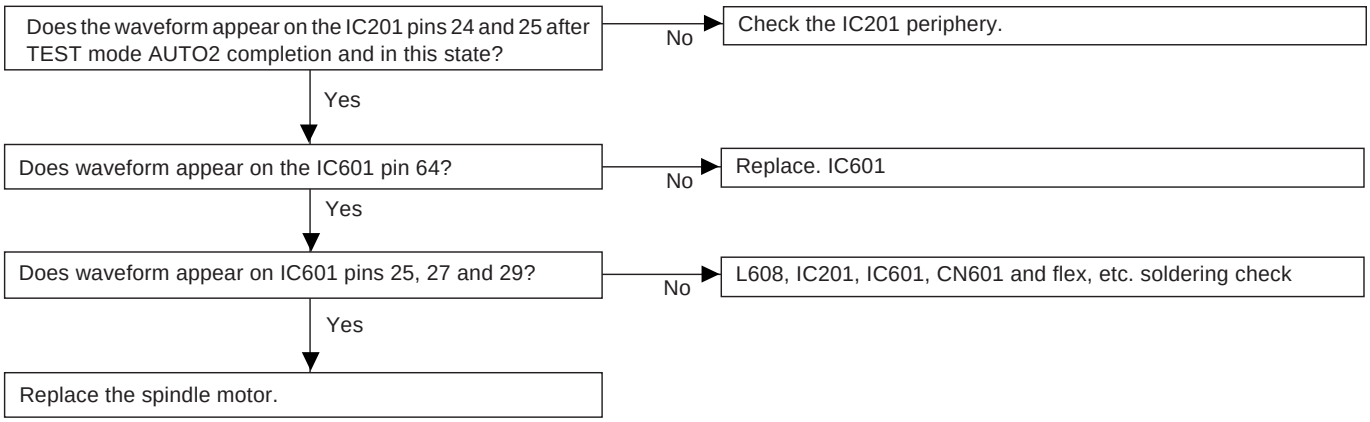


• Audio playback clrcult

Although the playback time display is acting., no sound is given during playback in the normal mode.

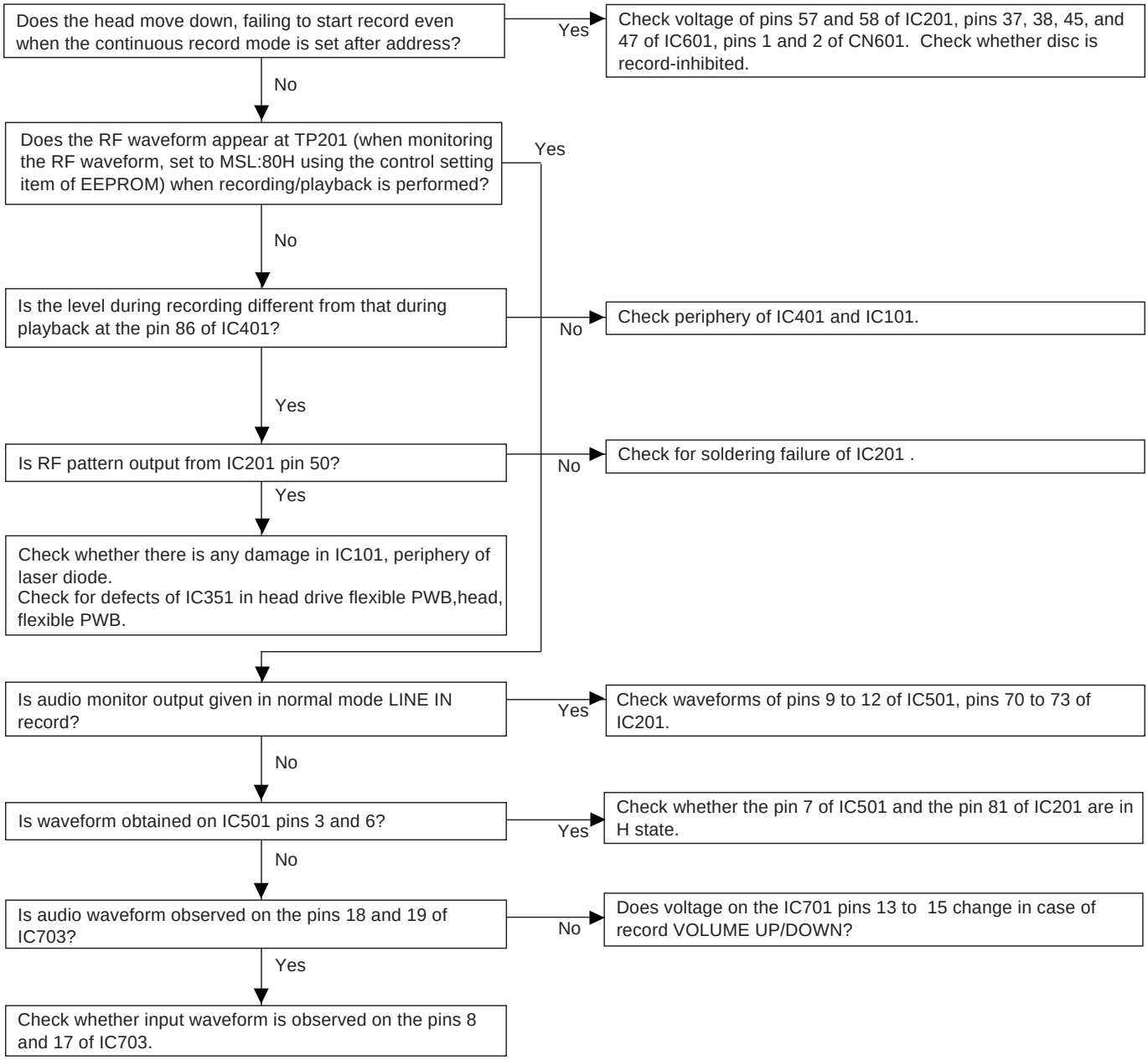


• The spindle motor fails to run.Does the head move



• Recording/playback operation

Insert a low reflection disc, and ascertain audio output by normal playback, and then set TEST REC mode.



FUNCTION TABLE OF IC

IC202 RH-iX2824AFZZ: 16 Bit D-RAM (IX2824AF)

Pin No.	Terminal Name	Function
1	Vcc	Power supply (2.6V)
2	DQ1	Data input/data output
3	DQ2	Data input/data output
4	$\overline{WE}$	Write enable
5	$\overline{RAS}$	Low address strobe
6	NC	Not connected
7	A10	Address input
8-11	A0-A3	Address input
12	Vcc	Power supply (2.6V)
13	Vss	Ground (0V)
14-19	A4-A9	Address input
20	$\overline{OE}$	Output enable
21	$\overline{CAS}$	Column address strobe
22	DQ3	Data input/data output
23	DQ4	Data input/data output
24	Vss	Ground (0V)

IC202 RH-iX2824AFZZ: 16 Bit D-RAM (IX2824AF)

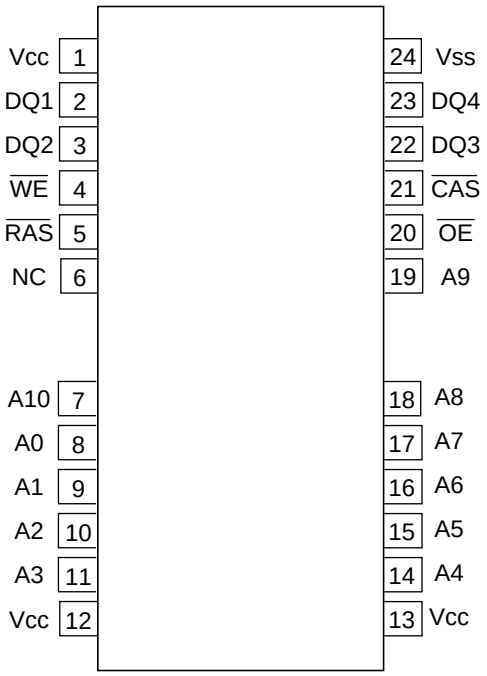


Figure 40 BLOCK DIAGRAM OF IC

IC402 VHi58X2404T-1: EEPROM (58X2404T)

Pin No.	Terminal Name	Function
1-3	A0-A2	Device address
4	VSS	Ground
5	SDA	Serial data input/output
6	SCL	Serial clock input
7	WP	Write protect
8	VCC	Power supply

IC401 RH-iX2823AF04 :System Microcomputer (IX2823AF) (1/2)

Pin No.	Port Name	Terminal Name	Input/Output	Function
1	P12/TCLKA	CIN	Input	Track cross signal/focus drive detection
2	TCLKB	SPIN	Input	Spindle motor FG pulse detection input
3*	P14	P14	Output	(not used)
4	P15	DISCPR	Input	Disc record inhibition switch input
5*	TIOCA2	SPWDS	Input	Spindle motor FG pulse width detection
6	P17	PDCNT	Output	Inner detection PD current control output
7	Vss	VSS	—	Ground potential
8	TxD0	RMDAT	Output	Remote control indication data output
9	TxD1	DSPDAT	Output	Unit indication data output
10	P32	P32	Input	Reserve (_RPLAY (connected to the pin 75)
11*	P33	DSPSTB	Output	Main unit display strobe output
12*	SCK0	SCK0	Output	Serial I/O clock output (not used)
13	SCK1	DSPSCK	Output	Unit indication data clock output
14	PE0	_EPCS	Output	EEPROM chip selection output
15	PE1	EEPD	Input/Output	EEPROM serial data input/output
16	PE2	EEPK	Output	EEPROM serial clock output
17*	PE3	EPRT	Output	EEPROM write protection
18	Vss	VSS	—	Ground potential
19	PE4	PCNT1	Outout	Vref supply control output of power IC
20	PE5	SYRS	Output	System LSI register selection output
21	PE6	_SYRD	Output	System LSI read enable output\
22	PE7	_SYWR	Output	System LSI write enable output
23-30	PD0-PD7	SYD0-SYD7	Input/Output	System LSI parallel data bus
31	Vss	VSS	—	Ground potential
32	PC0	PCLAT	Output	Record audio IC data latch output
33	PC1	_MCPGI	Input	Microphone plug insertion detection input
34	PC2	_INPGI	Input	Line/digital plug insertion detection
35	PC3	INPGCK	Input	Line/digital plug type detection
36	PC4	RCPCNT	Input/Output	Record circuit power control output
37	PC5	TEST1	Input	Test mode setting input 1
38	PC6	TEST0	Input	Test mode setting input 0
39	PC7	JPNP	Input	Kana conversion/Kana input existence/nonexistence discrimination
40	Vcc	VCC	—	Positive power supply
41*	PB0	OPICGA	Output	P.U detection sensitivity switching output
42*	PB1	_LCDRST	Input	LCD reset
43	PB2	PBLAT	Output	Audio IC data latch output
44	PB3	LDON	Output	P.U. laser ON/OFF control output
45	PB4	DISCP	Output	RF amplifier TE polarity switching output
46	PB5	SGAIN	Output	RF amplifier gain polarity switching output
47	PB6	RACLK	Output	Audio IC data clock output
48	PB7	RADAT	Output	Audio IC serial data output
49	Vss	VSS	—	Ground potential
50	PA0	_ELONH	Output	EL lighting control output H
51	PA1	_ELONL	Output	EL lighting control output L
52	PA2	_REC	Input	Unit REC button operation detection input
53	PA3	PBOPON	Output	Audio IC output stage control output
54	P20	P20	Output	Reserve
55	P21	_KHOLD	Input	Unit key hold switch input
56	TIOCC3	BUZOUT	Output	Beep sound pulse output
57	MD0	MD0	Input	Operation mode selection input 0
58	MD1	MD1	Input	Operation mode selection input 1
59	P23	INNSW	Input	Mechanism inner SW position detection input

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC401 RH-iX2823AF04 :System Microcomputer (IX2823AF) (2/2)

Pin No.	Port Name	Terminal Name	Input/Output	Function
60	$\overline{\text{WDTOVF}}$	WDTOVF	Output	Watch dog timer (not used)
61	MD2	MD2	Input	Operation mode selection input 2
62	RES	_RESET	Input	Microcomputer hard reset input
63	NMI	_NMI	Input	Nonmaskable interruption (not used)
64	$\overline{\text{STBY}}$	_STBY	Input	Microcomputer standby input (not used)
65	Vcc	VCC	—	Positive power supply
66	XTAL	XTAL	—	Crystal connection terminal
67	EXTAL	EXTAL	—	Crystal connection terminal
68	Vss	VSS	—	Ground potential
69	PF7	PF7	Output	Reserve
70	PF6	_PLAY	Input	Unit PLAY button operation detection input
71	PF5	EMPH0	Output	Audio emphasis control output 0
72*	PF4	PF4	Output	Spare
73	PF3	_DINT	Input	System LSI interruption
74	PF2	_ARQD	Input	Disk cap opens and closes detection/it is started and required
75	PF1	_RPLAY	Input	Remote control PLAY key operation detection input
76	IRQ0	_ARQK	Input	Start request by the key /DC-IN input
77	AVcc	AVCC	—	A/D and D/A converter positive power supply
78	Vref	VREF	—	A/D and D/A converter reference voltage
79	AN0	PLVDRY	Input	Dry battery voltage detection input
80	AN1	PLVDCI	Input	DC jack voltage detection input
81	AN2	PLVINN	Input	Lithium battery voltage detection input
82	AN3	RKEY	Input	Remote control key operation detection input
83	AN4	HKEY1	Input	Unit key operation detection input 1
84	AN5	HKEY2	Input	Unit key operation detection input 2
85	AN6	TEMP	Input	Ambient temperature detection input
86	DA1	LDVAR	Output	P.U. laser power setting output
87	AVss	AVSS	—	A/D and D/A converter ground potential
88	Vss	VSS	—	Ground potential
89*	P24	P24	Output	(not used)
90	TIOCB4	MCMON	Output	Internal operation status monitor
91*	P26	P26	Output	Spare
92	P27	DCNT	Output	Mechanism driver enable output
93	PG0	SENSE	Input	System LSI servo sense input
94	PG1	_FOK	Input	Focus OK signal input
95	PG2	_XRST	Output	System LSI hard reset output
96	PG3	CKSTP	Output	Microcomputer standby operation monitor output
97	PG4	_EJSW	Input	Ejection lever operation detection input
98	Vcc	VDD	—	Positive power supply
99	P10	PCNT2	Output	Vcc supply control output of power IC
100	P11	HDON	Output	Recording head current control output

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC601 VHiBD6603KV-1: Drive Servo/Motor Control (BD6603KV) (1/2)

Pin No.	Terminal Name	Function
1*	PWIN2	Half bridge 2 input
2	IN1F	Half bridge 1 forward input
3	IN1R	Half bridge 1 reverse input
4	IN2F	Half bridge 2 forward input
5	IN2R	Half bridge 2 reverse input
6	H1PG2	Half bridge 1 power section GND 2
7	H1ROUT	Half bridge 1 reverse output
8	H1VM	Half bridge 1 power section power supply
9	H1FOUT	Half bridge 1 forward output
10	H2PG1	Half bridge 1 power section GND 1
11	H2PG2	Half bridge 2 power section GND 2
12	H2ROUT	Half bridge 2 reverse output
13	H2VM	Half bridge 2 power section power supply
14	H2FOUT	Half bridge 2 forward output
15	H2PG1	Half bridge 2 power section GND 1
16	BRK-	Brake comparator input (-)
17	BRK+	Brake comparator input (+)
18	SPUIN	SPIN detection comparator input (U phase)
19	SPVIN	SPIN detection comparator input (V phase)
20	SPWIN	SPIN detection comparator input (W phase)
21	SPCOM	SPIN motor coil midpoint input terminal
22	SGND	Small signal section GND (MOS)
23	ASGND	Small signal section GND (Bip.)
24	SPPG2	Spindle power section GND 2
25	SPUOUT	Spindle motor output (U phase)
26	SPVM2	Spindle power section power supply 2
27	SPVOUT	Spindle motor output (V phase)
28	SPPG1	Spindle power section GND1
29	SPWOUT	Spindle motor output (W phase)
30	SPVM1	Spindle power section power supply 1
31	CST	Start oscillation capacitor connection terminal
32	CSL2	Slope capacitor connection terminal 2
33	CSL1	Slope capacitor connection terminal 1
34	FG	FG output
35	IN4R	Half bridge 4 reverse input
36	IN4F	Half bridge 4 forward input
37	IN3R	Half bridge 3 reverse input
38	IN3F	Half bridge 3 forward input
39	H4PG1	Half bridge 4 power section GND1
40	H4FOUT	Half bridge 4 forward output
41	H4VM	Half bridge 4 power section power supply
42	H4ROUT	Half bridge 4 reverse output
43	H4PG2	Half bridge 4 power section GND2
44	H3PG1	Half bridge 3 power section GND1
45	H3FOUT	Half bridge 3 forward output
46	H3VM	Half bridge 3 power section power supply
47	H3ROUT	Half bridge 3 reverse output
48	H3PG2	Half bridge 3 power section GND2
49	VG	Chargepump output
50*	C2M	CHARGEPUMP capacitor 2 connection terminal -
51*	C2P	CHARGEPUMP capacitor 2 connection terminal +

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC601 VHiBD6603KV-1: Drive Servo/Motor Control (BD6603KV) (2/2)

Pin No.	Terminal Name	Function
52*	C1M	CHARGEPUMP capacitor 1 connection termina l -
53*	C1P	CHARGEPUMP capacitor 1 connection terminal +
54	EXTCLK	Synchronous clock input terminal
55	STHB	Half bridge mute terminal
56	STALL	Stand-by terminal
57	VCC1	Small signal section power supply terminal 1 (MOS)
58	VCC2	Small signal section power supply terminal 2 (Bip.)
59*	PW2VM	Half bridge 2 power section power supply
60*	PW2OUT	Half bridge 2 output
61	PWPG	Half bridge power section GND
62	PW1OUT	Half bridge 1 output
63	PW1VM	Half bridge 1 power section power supply
64	PWIN1	Half bridge 1 input

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC601 VHiBD6603KV-1: Drive Servo/Motor Control (BD6603KV)

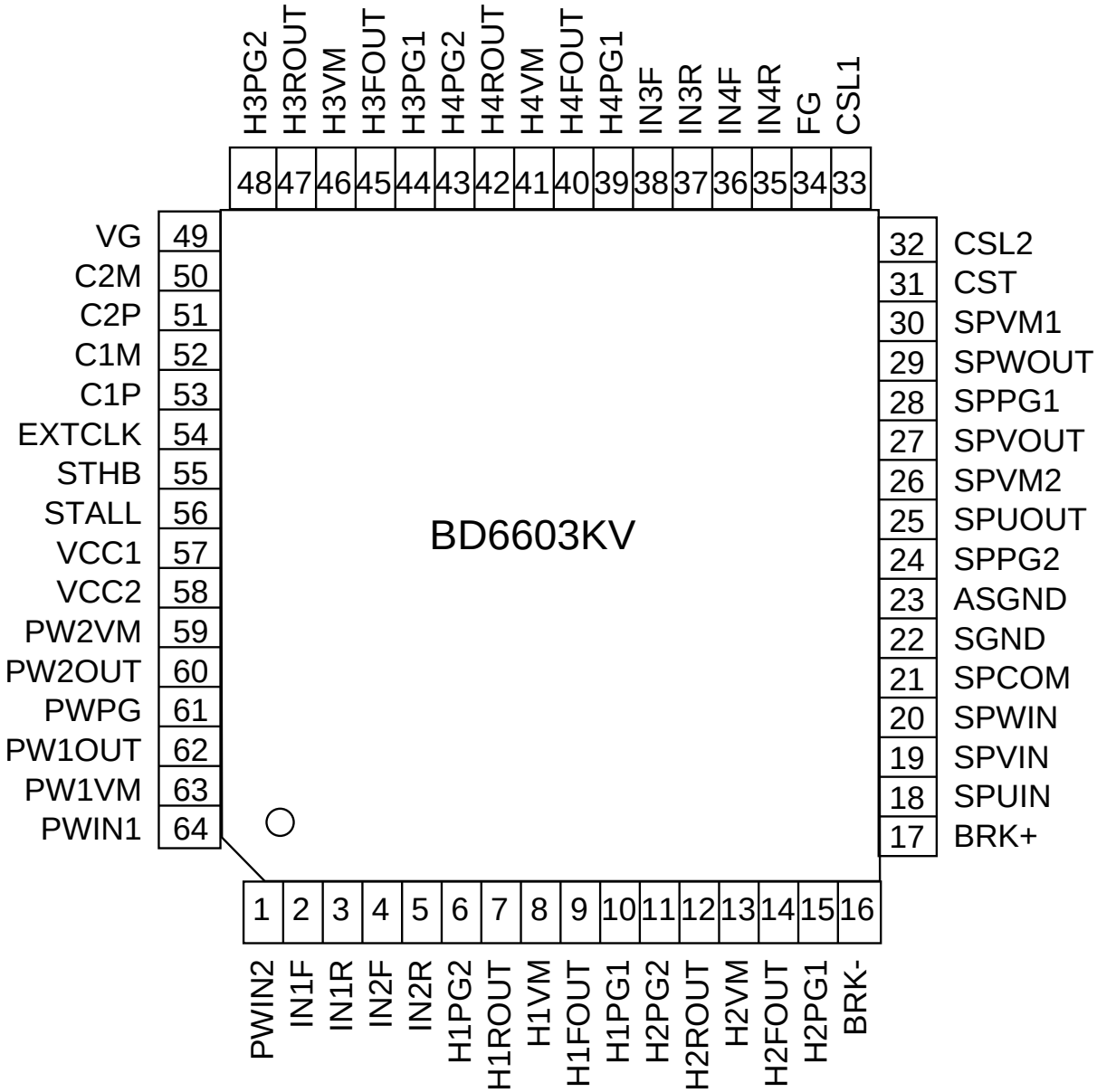


Figure 44 BLOCK DIAGRAM OF IC

SHARP PARTS GUIDE

MODEL MD-MT831H(GL)
MD-MT831W(GL)

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following information.

1. MODEL NUMBER
2. REF. No.
3. PART NO.
4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

For U.S.A. only

Contact your nearest SHARP Parts Distributor to order.

For location of SHARP Parts Distributor,
Please call Toll-Free;
1-800-BE-SHARP

Explanation of capacitors/resistors parts codes

Capacitors

VCC ..... Ceramic type
VCK..... Ceramic type
VCT ..... Semiconductor type
VC • • MF ..... Cylindrical type (without lead wire)
VC • • MN..... Cylindrical type (without lead wire)
VC • • TV..... Square type (without lead wire)
VC • • TQ ..... Square type (without lead wire)
VC • • CY ..... Square type (without lead wire)
VC • • CZ ..... Square type (without lead wire)
VC • • • • • • • • • J .. The 13th character represents capacity difference.
("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
"C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD ..... Carbon-film type
VRS..... Carbon-film type
VRN ..... Metal-film type
VR • • MF ..... Cylindrical type (without lead wire)
VR • • MN..... Cylindrical type (without lead wire)
VR • • TV..... Square type (without lead wire)
VR • • TQ ..... Square type (without lead wire)
VR • • CY ..... Square type (without lead wire)
VR • • CZ ..... Square type (without lead wire)
VR • • • • • • • • • J .. The 13th character represents error.
("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:
Parts marked with "⚠" are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

MD-MT831H/W

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION

INTEGRATED CIRCUITS

IC1	VHI7WH74FK/-1	J	AE	Flip Flop IC,7WH74FK
IC101	VHIIR3R58M/-1	J	AM	RF Signal Processor,IR3R58M
IC200	VHI62FP2502-1	J	AE	Power Drive,62FP2502
IC201	VHILR37812/-1	J	BA	Encode/Decode/Servo Atrac, LR37812
IC202	RH-IX2824AFZZ	J	AX	16Bit D-RAM,IX2824AF
IC203	VHI62FP1702-1	J	AE	1.7V Regulator,62FP1702
IC351	VHI74ACT02T-1	J	AE	Head Driver,74ACT02T
IC353	VHIFTD2005/-1	J	AG	Head Driver,FTD2005
IC354	VHICPH5608/-1	J	AH	Head Driver,CPH5608
IC401	RH-IX2823AF04	J	AV	System Microcomputer, IX2823AF
IC402	VHI58X2404T-1	J	AF	EEPROM,58X2404T
IC404	VHIN7SZ86P5-1	J	AE	Gate IC,N7SZ86P5
IC501	VHIAK4519VF-1	J	AQ	AD/DA Converter,AK4519VF
IC601	VHIBD6603KV-1	J	AX	Drive Servo/Motor Control, BD6603KV
IC701	VHIIR3R54N/-1	J	AQ	Audio Amp.,IR3R54N
IC703	VHIIR3R59N/-1	J	AN	Audio Amp.,IR3R59N
IC771	VHI62GR2522-1	J	AG	2.5V Regulator,62GR2522
IC801	VHIHN1C01FU-1	J	AD	Dual Transistor,HN1C01FU
IC802	VHIFDC634P/-1	J	AG	Constant Current Drive, FDC634P
IC821	VHIFDG312P/-1	J	AD	P Channel Dual FET,FDG312P
IC830	VHIIR3M12N/-1	J	AM	DC/DC Converter,IR3M12N
IC841	VHIXC66DS01-1	J	AF	Reset 2.35V Regulator, XC66DS01
IC851	VHINDS331N/-1	J	AD	Power Drive,NDS331N
IC871	VHI62GR4522-1	J	AG	4.5V Regulator,62GR4522

TRANSISTORS

Q101	VS2SA17457/-1	J	AB	Silicon,PNP,2SA17457
Q102	VSRN1104///-1	J	AB	Digital,NPN,RN1104
Q601	VSRT1P441U/-1	J	AB	Digital,NPN,RT1P441 U
Q602	VSRT1N441U/-1	J	AB	Digital,NPN,RT1N441 U
Q711	VSRN1444A//-1	J	AC	Digital,NPN,RN1444 A
Q721	VS2SC4738BL-1	J	AC	Silicon,NPN,2SC4738 BL
Q841	VSRN1104///-1	J	AB	Digital,NPN,RN1104
Q891	VS2SA1873GR-1	J	AC	Silicon,PNP,2SA1873 GR
Q901	VSRN1104///-1	J	AB	Digital,NPN,RN1104

DIODES

D351	VHDSBE803//-1	J	AD	Silicon,SBE803
D431	VHD1SS361//-1	J	AB	Silicon,1SS361
D432	VHDMA793///-1	J	AC	Silicon,MA793
D491	VHE015Z5R1Y-1	J	AD	Zener,5.1V,015Z5.1Y
D493	VHE015Z5R1Y-1	J	AD	Zener,5.1V,015Z5.1Y
D800	VHD1SS360//-1	J	AB	Silicon,1SS360
D801	VHDF05J2L//-1	J	AC	Silicon,F05J2L
D802	VHE015Z5R1Y-1	J	AD	Zener,5.1V,015Z5.1Y
D803,804	VHD1SS400//-1	J	AB	Silicon,1SS400
D805	VHDF05J2L//-1	J	AC	Silicon,F05J2L
D813	VHE015Z2R7Z-1	J	AB	Zener,2.7V,015Z2.7Z
D821	VHDF10J2E//-1	J	AC	Silicon,F10J2E
D836	VHDMA793///-1	J	AC	Silicon,MA793
D841	VHDRB731U//-1	J	AC	Silicon,RB731U
D851	VHD1SS389//-1	J	AB	Silicon,1SS389
D852	VHDU1FWJ44N-1	J	AD	Silicon,U1FWJ44N
D861	VHDF10J2E//-1	J	AC	Silicon,F10J2E
PH901(8-3)	————		—	Photo Interrupter,CPI100 (Supplies at REF No.8)

COILS

L100	VPBNN100M0000	J	AC	10 µH
L171	RCILC0356AFZZ	J	AC	10 µH
L204	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L452	RCILC0352AFZZ	J	AB	Tip Impeder,150mA
L453,454	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L456~458	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L600	RCILC0331AFZZ	J	AC	2.2 µH,Choke
L601,602	RCILC0372AFZZ	J	AC	22 µH,Choke
L603,604	RCILC0358AFZZ	J	AC	4.7 µH,Choke
L608~610	RCILC0358AFZZ	J	AC	4.7 µH,Choke
L702,703	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L704	RCILC0352AFZZ	J	AB	Tip Impeder,150mA
L711	RCILC0352AFZZ	J	AB	Tip Impeder,150mA
L712~714	RCILC0353AFZZ	J	AB	Tip Solid Induction,100mA
L771	RCILC0359AFZZ	J	AC	100 µH,Choke
L821	RCILC0282AFZZ	J	AC	27 µH,Choke
L851	RCILC0332AFZZ	J	AC	4.7 µH,Choke
L852	RCILC0333AFZZ	J	AC	10 µH,Choke
L862	RCILC0359AFZZ	J	AC	100 µH,Choke
L871	VPBNNR47M0000	J	AC	0.47 µH

VIBRATORS

XL201	RCRSC0028AFZZ	J	AH	Crystal,33.868 MHz
XL401	RCRM-0203AFZZ	J	AD	Ceramic,4.19 MHz

CAPACITORS

C2	VCKYCY1CB104K	J	AB	0.1 µF,16V
C100	VCSATN0JJ106M	J	AC	10 µF,6.3V,Electrolytic,Tantalum
C102,103	VCKYCY0JB105K	J	AC	1 µF,6.3V
C106	RC-KZ1228AFZZ	J	AC	1 µF,10V
C107	VCKYTV1CB104K	J	AA	0.1 µF,16V
C108,109	VCKYCY0JB105K	J	AC	1 µF,6.3V
C110	VCKYCY1AB224K	J	AB	0.22 µF,10V
C111	RC-KZ1228AFZZ	J	AC	1 µF,10V
C112	VCKYTV1CB104K	J	AA	0.1 µF,16V
C113	VCKYCY0JB105K	J	AC	1 µF,6.3V
C114	VCCCCY1HH5R0C	J	AA	5 pF (CH),50V
C121,122	VCCCCY1HH221J	J	AA	220 pF (CH),50V
C123,124	VCCCCY1HH331J	J	AA	330 pF (CH),50V
C130,131	VCKYCY1CB104K	J	AB	0.1 µF,16V
C132	VCKYCY1AB224K	J	AB	0.22 µF,10V
C133	RC-KZ1239AFZZ	J	AB	0.22 µF,16V,Ceramic
C161	VCKYCY0JB105K	J	AC	1 µF,6.3V
C165	VCKYCY1CB333K	J	AA	0.033 µF,16V
C171	RC-SZ1144AFZZ	J	AD	33 µF,6.3V,Electrolytic,Tantalum
C200	VCKYCY0JB105K	J	AC	1 µF,6.3V
C201	VCSATA0JJ226M	J	AD	22 µF,6.3V,Electrolytic,Tantalum
C202	VCSATA0JJ226M	J	AD	22 µF,6.3V,Electrolytic,Tantalum
C203	VCKYCY1CB104K	J	AB	0.1 µF,16V
C204	VCKYCY1AB474K	J	AC	0.47 µF,10V
C205	VCKYCY1CB104K	J	AB	0.1 µF,16V
C206	VCKYCY0JB105K	J	AC	1 µF,6.3V
C207	VCKYCY1CB104K	J	AB	0.1 µF,16V
C209	VCKYCY1CB104K	J	AB	0.1 µF,16V
C210	VCKYCY0JB105K	J	AC	1 µF,6.3V
C211	VCCCCY1HH5R0C	J	AA	5 pF (CH),50V
C212	VCCCCY1HH8R0D	J	AA	8 pF (CH),50V
C351	VCCCCY1HH180J	J	AA	18 pF (CH),50V
C353	VCSAFA0JJ106M	J	AD	10 µF,6.3V,Electrolytic,Tantalum
C354	VCKYCY1CB104K	J	AB	0.1 µF,16V
C357	VCKYCY1CB104K	J	AB	0.1 µF,16V
C361	VCKYCY1EB393K	J	AB	0.039 µF,25V
C401	VCKYCY1CB104K	J	AB	0.1 µF,16V
C431	VCKYCY1AB474K	J	AC	0.47 µF,10V
C491	RC-KZ1182AFZZ	J	AB	0.1 µF,16V,Ceramic
C492	VCKYCY1EB103K	J	AA	0.01 µF,25V
C500	VCSATN0JJ106M	J	AC	10 µF,6.3V,Electrolytic,Tantalum
C501A,502A	VCKYCY1HB222K	J	AA	0.0022 µF,50V
C503,504	VCSATN1AJ335M	J	AC	3.3 µF,6.3V,Electrolytic,Tantalum
C505,506	VCKYCY1HB102K	J	AA	0.001 µF,50V
C507	VCSATN0JJ106M	J	AC	10 µF,6.3V,Electrolytic,Tantalum
C508	VCKYCY0JB105K	J	AC	1 µF,6.3V
C509A,510A	VCKYCY0JB105K	J	AC	1 µF,6.3V
C511	VCKYCY0JB105K	J	AC	1 µF,6.3V
C551A	VCKYCY1EB223K	J	AB	0.022 µF,25V
C600	VCEAPW0JW226M	J	AC	22 µF,6.3V,Electrolytic
C601~604	VCKYCY0JB105K	J	AC	1 µF,6.3V
C605	VCKYCY1CB104K	J	AB	0.1 µF,16V
C608	RC-KZ1184AFZZ	J	AC	1 µF,16V,Ceramic
C609,610	VCKYCY1AB224K	J	AB	0.22 µF,10V
C701,702	VCSATN0JJ106M	J	AC	10 µF,6.3V,Electrolytic,Tantalum
C703	VCKYCY1EB103K	J	AA	0.01 µF,25V
C711,712	VCCCCY1HH101J	J	AA	100 pF (CH),50V
C713,714	VCKYCY0JB105K	J	AC	1 µF,6.3V
C715	VCKYCY1CB104K	J	AB	0.1 µF,16V
C721,722	VCSATN1AJ335M	J	AC	3.3 µF,6.3V,Electrolytic,Tantalum
C723,724	VCKYCY1HB102K	J	AA	0.001 µF,50V
C725,726	VCSATN1AJ335M	J	AC	3.3 µF,6.3V,Electrolytic,Tantalum
C731	VCKYCY1CF224Z	J	AB	0.22 µF,16V
C733,734	VCKYCY1CB104K	J	AB	0.1 µF,16V
C737	VCKYCY1EB223K	J	AB	0.022 µF,25V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C753	VCKYCY1AF105Z	J	AB	1 µF,10V
C754	VCKYCY0JB105K	J	AC	1 µF,6.3V
C758	RC-KZ1184AFZZ	J	AC	1 µF,16V,Ceramic
C760	VCKYCY1CB104K	J	AB	0.1 µF,16V
C763,764	VCKYCY0JB105K	J	AC	1 µF,6.3V
C765,766	VCKYCY1AB224K	J	AB	0.22 µF,10V
C771	VCSATK0JJ476M	J	AD	47 µF,6.3V,Electrolytic,Tantalum
C773	VCKYCY1AB224K	J	AB	0.22 µF,10V
C774	VCKYCY1AF105Z	J	AB	1 µF,10V
C775	VCKYCY1EB103K	J	AA	0.01 µF,25V
C800	VCKYCY0JB105K	J	AC	1 µF,6.3V
C801	VCKYCY1CB104K	J	AB	0.1 µF,16V
C805	VCEAPW0JW107M	J	AD	100 µF,6.3V,Electrolytic
C806	RC-KZ1186AFZZ	J	AD	3.3 µF,10V,Ceramic
C807	VCKYCY1EB103K	J	AA	0.01 µF,25V
C808	VCKYCY0JB105K	J	AC	1 µF,6.3V
C821	VCCCCY1HH560J	J	AA	56 pF (CH),50V
C822	VCCCCY1HH100D	J	AA	10 pF (CH),50V
C823	VCKYCY1CB104K	J	AB	0.1 µF,16V
C825	VCKYTQ1CB225K	J	AC	2.2 µF,16V
C826	VCEAPW0GW227M	J	AD	220 µF,4.0V,Electrolytic
C831	VCKYCY0JB105K	J	AC	1 µF,6.3V
C833	RC-KZ1205AFZZ	J	AB	0.33 µF,10V
C836~838	VCKYCY1CB104K	J	AB	0.1 µF,16V
C841	VCSAFA0JJ106M	J	AD	10 µF,6.3V,Electrolytic,Tantalum
C842	VCKYCY0JB105K	J	AC	1 µF,6.3V
C851	VCKYCY1EB103K	J	AA	0.01 µF,25V
C853	VCCCCY1HH470J	J	AA	47 pF (CH),50V
C854	VCKYCY1EB103K	J	AA	0.01 µF,25V
C855	VCCCCY1HH181J	J	AA	180 pF (CH),50V
C856	RC-KZ1184AFZZ	J	AC	1 µF,16V,Ceramic
C857	VCKYTQ0JB106K	J	AE	10 µF,6.3V
C858	VCCCCY1HH470J	J	AA	47 pF (CH),50V
C859	VCCCCY1HH271J	J	AA	270 pF (CH),50V
C861	RC-KZ1184AFZZ	J	AC	1 µF,16V,Ceramic
C869	VCSATK0JJ476M	J	AD	47 µF,6.3V,Electrolytic,Tantalum
C871	RC-KZ1228AFZZ	J	AC	1 µF,10V
C872	VCSATA1AJ106M	J	AE	10 µF,10V,Electrolytic,Tantalum
C891	VCKYCY1AB474K	J	AC	0.47 µF,10V
C902	VCKYCY1EB103K	J	AA	0.01 µF,25V
C905~907	VCKYCY1HB222K	J	AA	0.0022 µF,50V
C908	VCKYCY1AB224K	J	AB	0.22 µF,10V
C909,910	VCKYCY1CB273K	J	AA	0.027 µF,16V
C911	VCKYCY1CB104K	J	AB	0.1 µF,16V

RESISTORS

	VRS-CY1JB000J	J	AA	0 ohm,Jumper, 0.8×1.55mm,Green
	VRS-TV2AB000J	J	AA	0 ohm,Jumper,1.25×2mm,Green
L202	VRS-TV2AB5R6J	J	AA	5.6 ohms,1/10W
R101~104	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R106	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R111	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R112	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R131	VRN-CY1JD124D	J	AA	120 kohms,1/16W,1%,Metal Film
R132	VRS-CY1JB824D	J	AA	820 kohms,1/16W
R133	VRN-CY1JD124D	J	AA	120 kohms,1/16W,1%,Metal Film
R134	VRS-CY1JB824D	J	AA	820 kohms,1/16W
R135	VRN-CY1JD563D	J	AA	56 kohms,1/16W,1%,Metal Film
R136	VRS-CY1JB394D	J	AA	390 kohms,1/16W
R137	VRN-CY1JD563D	J	AA	56 kohms,1/16W,1%,Metal Film
R138	VRS-CY1JB394D	J	AA	390 kohms,1/16W
R139	VRS-CY1JB393J	J	AA	39 kohms,1/16W
R140	VRS-CY1JB394J	J	AA	390 kohms,1/16W
R161	VRS-CY1JB122J	J	AA	1.2 kohms,1/16W
R204	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R205	VRS-CY1JB683D	J	AA	68 kohms,1/16W,1%
R206	VRN-CY1JD273D	J	AA	27 kohms,1/16W,1%,Metal Film
R207	VRN-CY1JD681D	J	AA	680 ohms,1/16W,1%,Metal Film
R222	VRS-CY1JB105J	J	AA	1 Mohm,1/16W
R351	VRS-TV2AB100J	J	AA	10 ohm,1/10W
R361	VRS-TQ2BB150J	J	AA	15 ohms,1/8W
R402	VRN-CY1JD104D	J	AA	100 kohm,1/16W,1%,Metal Film
R403	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R404	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R405	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R406	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R407	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R408	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R411	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R412	VRS-CY1JB153J	J	AA	15 kohms,1/16W
R413~416	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R422	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R423	VRN-CY1JD223D	J	AA	22 kohms,1/16W,1%,Metal Film
R424,425	VRS-CY1JB223J	J	AA	22 kohms,1/16W
R431	VRS-CY1JB334J	J	AA	330 kohms,1/16W
R492	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R500	VRS-CY1JB4R7J	J	AA	4.7 ohms,1/16W
R501A,502A	VRS-CY1JB471J	J	AA	470 ohms,1/16W
R701,702	VRS-CY1JB220J	J	AA	22 ohms,1/16W
R703	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R711,712	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R713,714	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R715,716	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R717,718	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R719,720	VRS-CY1JB822J	J	AA	8.2 kohms,1/16W
R723,724	VRS-CY1JB682J	J	AA	6.8 kohms,1/16W
R725	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R726	VRS-CY1JB393J	J	AA	39 kohms,1/16W
R727	VRS-CY1JB822J	J	AA	8.2 kohms,1/16W
R728	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R729,730	VRS-CY1JB272J	J	AA	2.7 kohms,1/16W
R754	VRS-CY1JB154J	J	AA	150 kohms,1/16W
R757	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R758	VRS-CY1JB101J	J	AA	100 ohm,1/16W
R761	VRS-CY1JB224J	J	AA	220 kohms,1/16W
R762	VRS-CY1JB913J	J	AA	91 kohms,1/16W
R765,766	VRS-CY1JB200J	J		20 ohms,1/16W
R800	VRS-TV2AB223J	J	AA	22 kohms,1/10W
R801	VRN-CY1JD222D	J	AA	2.2 kohms,1/16W,1%,Metal Film
R802	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R804	VRN-CY1JD681D	J	AA	680 ohms,1/16W,1%,Metal Film
R805	VRS-CY1JB684D	J	AA	680 kohms,1/16W
R806	VRN-CY1JD304D	J	AA	300 kohms,1/16W,1%,Metal Film
R808	VRS-CY1JB153J	J	AA	15 kohms,1/16W
R809	VRS-CY1JB222J	J	AA	2.2 kohms,1/16W
R810	VRS-CY1JB562J	J	AA	5.6 kohms,1/16W
R811,812	VRN-CY1JD104D	J	AA	100 kohm,1/16W,1%,Metal Film
R813	VRN-CY1JD102D	J	AA	1 kohm,1/16W,1%,Metal Film
R815	VRN-CY1JD563D	J	AA	56 kohms,1/16W,1%,Metal Film
R816	VRN-CY1JD243D	J	AA	24 kohms,1/16W,1%,Metal Film
R821	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R823	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R824	VRN-CY1JD274D	J	AA	270 kohms,1/16W,1%,Metal Film
R825	VRS-CY1JB106J	J	AA	10 Mohm,1/16W
R826	VRN-CY1JD224D	J	AA	220 kohms,1/16W,1%,Metal Film
R831	VRN-CY1JD184D	J	AA	180 kohms,1/16W,1%,Metal Film
R832	VRN-CY1JD204D	J	AA	200 kohms,1/16W,1%,Metal Film
R838	VRS-CY1JB470J	J	AA	47 ohms,1/16W
R841	VRN-CY1JD104D	J	AA	100 kohm,1/16W,1%,Metal Film
R843	VRN-CY1JD104D	J	AA	100 kohm,1/16W,1%,Metal Film
R844	VRS-CY1JB564J	J	AA	560 kohms,1/16W
R851	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R852	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R853	VRN-CY1JD224D	J	AA	220 kohms,1/16W,1%,Metal Film
R855	VRN-CY1JD304D	J	AA	300 kohms,1/16W,1%,Metal Film
R857	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R858	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R860	VRS-CY1JB333J	J	AA	33 kohms,1/16W
R891	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R892	VRS-CY1JB820J	J	AA	82 ohms,1/16W
R893	VRS-CY1JB102J	J	AA	1 kohm,1/16W
R894	VRS-CY1JB220J	J	AA	22 ohms,1/16W
R904	VRS-CY1JB123J	J	AA	12 kohms,1/16W
R905	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R906	VRS-CY1JB274J	J	AA	270 kohms,1/16W
R907	VRS-CY1JB184J	J	AA	180 kohms,1/16W
R908	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R909	VRS-CY1JB103J	J	AA	10 kohm,1/16W
R920	VRS-CY1JB104J	J	AA	100 kohm,1/16W
R921	VRS-CY1JB331J	J	AA	330 ohms,1/16W
R922	VRS-CY1JB104J	J	AA	100 kohm,1/16W

OTHER CIRCUITRY PARTS

CN101	QCNCW801XAFZZ	J	AH	Socket,22Pin
CN451	QCNCW846KAFZZ	J	AE	Socket,10Pin
CN601	QCNCW863QAFZZ	J	AE	Socket,15Pin
CN701,702	QCNCW862XAFZZ	J	AF	Socket,22Pin
J701	VHLJFJ7001/-1	J	AN	Jack,Optical/Line In
J702	QJAKM0209AFZZ	J	AE	Jack,Mic In

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
J703	QJAKM0205AFZZ	J	AH	Jack,Remote Control/ Headphones
J801	QJAKC0146AFZZ	J	AE	Jack,DC In
M901	RMOTV0529AFZZ	J	AS	Motor Ass'y [Sled]
M902	RMOTV0530AFZZ	J	AS	Motor Ass'y [Spindle]
M903	RMOTV0531AFM1	J	AQ	Motor Ass'y [Lift]
SW401	QSW-M9015AFZZ	J	AD	Switch,Push Type [Eject]
SW402	QSW-S0948AFZZ	J	AC	Switch,Slide Type [Hold]
SW403	QSW-M9016AFZZ	J	AD	Switch,Push Type [Lid Detection]
SW901(8-2)	————		—	Switch,Push Type [Disc Protect] (Supplies at REF No.8)

MECHANICAL PARTS

1	NGERH0597AFZZ	J	AC	Wheel,Drive
2	NSFTD0334AFZZ	J	AD	Screw,Drive
3	LANGF1612AFM1	J	AF	Bracket,Magnetic Field Ass'y
4	MARMM0172AFFW	J	AF	Bracket,Magnetic Head
5	LHLDX3144AFM1	J	AT	Cartridge Holder Ass'y
6	LCHSM0948AFM1	J	AS	Main Chassis Ass'y
7	PCUSG0599AFZZ	J	AB	Cushion
8	QPWBH0348AFM1	J	AN	Mechanism Flexible PWB Ass'y
8- 1	————		—	Mechanism Flexible PWB (Supplies at REF No.8)
8- 2(SW901)	————		—	Switch,Push Type [Disc Protect] (Supplies at REF No.8)
8- 3(PH901)	————		—	Photo Interrupter,CPI100 (Supplies at REF No.8)
9	MLEVF2664AFFW	J	AD	Lever,Eject
10	MSPRD1367AFFJ	J	AD	Spring,Bracket
11	MSPRP0959AFFJ	J	AE	Spring,Thrust Plate
12	MSPRP0925AFFJ	J	AD	Driver Screw Bracket
13	NGERH0603AFZZ	J	AE	Gear,Drive
14	MSPRP0958AFFJ	J	AE	Spring,Magnetic Field
⚠15	RCTRH8194AFZZ	J	BM	Optical Pickup Ass'y
16	MSPRP0922AFFJ	J	AD	Spring,Drive Grip
17	NSFTM0292AFFW	J	AC	Shaft,Guide
18	MSPRT1638AFFJ	J	AC	Spring,Eject Lever
19	MLEVF2662AFM1	J	AG	Lift Working Lever Ass'y
20	MLEVF2663AFFW	J	AD	Lever,Lift
21	RCILH0114AFZZ	J	AN	Magnetic Head
501	LX-BZ0800AFZZ	J	AA	Screw,ø1.4×2.5mm
502	LX-BZ0804AFFF	J	AA	Screw,ø1.4×2.2mm
503	LX-BZ0823AFZZ	J	AA	Screw,ø1.4×1.2mm
504	LX-BZ0959AFZZ	J	AB	Screw,ø1.4×1.8mm
505	LX-BZ0997AFZZ	J	AC	Screw,ø1.4×4.5mm
506	LX-BZ0998AFZZ	J	AC	Screw,ø1.4×1.0mm
507	LX-JZ0148AFZZ	J	AA	Screw,ø1.7×3mm
508	LX-JZ0154AFZZ	J	AA	Screw,ø1.4×2.8mm
509	LX-JZ0158AFZZ	J	AA	Screw,ø1.4×2.5mm
510	LX-WZ9290AFZZ	J	AA	Washer,ø0.8×ø2.4×0.2mm
511	XSPSN14P01500	J	AA	Screw,ø1.4×1.5mm
512	XWSSD14-05000	J	AA	Washer,ø1.4×0.5mm
513	LX-BZ1004AFZZ	J	AB	Screw,ø1.4×1.1mm
M901	RMOTV0529AFZZ	J	AS	Motor Ass'y [Sled]
M902	RMOTV0530AFZZ	J	AS	Motor Ass'y [Spindle]
M903	RMOTV0531AFM1	J	AQ	Motor Ass'y [Lift]

CABINET PARTS

201	GFTAC3160AFM1	J	AU	Top Cabinet
202	GCABD4419AFSA	J	AS	Bottom Cabinet [MD-MT831H]
202	GCABD4420AFSA	J	AS	Bottom Cabinet [MD-MT831W]
203	LHLDZ3192AFM1	J	AU	Main Frame Ass'y
204	PCUSG0693AFZZ	J	AB	Cushion
205	PSHET0455AFZZ	J	AB	Sheet,Microphone Insulation
206	PSHET0456AFZZ	J	AB	Sheet,Line Insulation
207	PSHET0457AFZZ	J	AB	Sheet,Capacitor Insulation
211	QTANB9412AFFQ	J	AD	Terminal,Rechargeable Battery,+
212	QTANZ9176AFFQ	J	AB	Terminal A,External
213	QTANZ9177AFFQ	J	AC	Terminal B,External
214	GCABA2911AFSA	J	AM	Center Cabinet A
215	JKNBZ2216AFSA	J	AF	Button,Eject
216	GCOVA2329AFSA	J	AB	Cover,DC Jack
217	QPWBH0349AFZZ	J	AE	Junction Flexible PWB
218	JKNBZ2217AFSA	J	AD	Knob,Hold
219	PFLT-1127AFZZ	J	AA	PU Felt
220	GFTAB1372AFSA	J	AE	Cover,Battery
221	QTANB9413AFFQ	J	AC	Terminal,Rechargeable Battery,-
222	HDECQ0607AFSA	J	AH	Decoration Plate
223	JKNBZ2210AFSA	J	AL	Button,Operation
224	JKNBZ2212AFSA	J	AF	Button,Play
225	JKNBZ2213AFSA	J	AF	Button,Record Level
226	JKNBZ2214AFSA	J	AF	Button,Volume
227	JKNBZ2215AFSA	J	AC	Button,Record
228	LANGT1979AFM1	J	AH	Bracket,Display
229	LANGT1980AFM1	J	AE	Bracket Fitting Ass'y
230	PFLT-1158AFZZ	J	AB	Sheet,LCD Flexible Insulation
231	PFLT-1163AFZZ	J	AB	Sheet,LCD Flexible PWB Protection
232	PSHET0462AFZZ	J	AB	Sheet,Key Flexible Insulation
233	PSHEZ1097AFZZ	J	AB	Sheet,Bracket Fitting
234	RUNTK0525AFZZ	J	AS	Key Flexible PWB Ass'y
235	RUNTZ0742AFZZ	J	AX	LCD Ass'y
237	PSHET0442AFZZ	J	AC	Insulation Sheet,Bottom Cabinet
238	PSHET0472AFZZ	J	AB	Sheet,Junction Insulation
239	PFLT-1157AFZZ	J	AB	Sheet,Head Flexible PWB Insulation
240	PSHET0463AFZZ	J	AB	Sheet A,Jack PWB Insulation
241	PSHET0464AFZZ	J	AB	Sheet B,Jack PWB Insulation
242	PCUSS0784AFZZ	J	AB	Cushion,LCD
247	PFLT-1159AFZZ	J	AB	Sheet,Key Flexible PWB Holder
248	PSHET0469AFZZ	J	AB	Sheet,Play
249	GCABA2912AFSA	J	AH	Center Cabinet B
250	GCOVA2328AFSA	J	AC	Cover,External Terminal
251	LHLDZ1777AFSA	J	AC	Cover,Terminal,+
253	PSHEZ1143AFZZ	J	AB	Sheet,Microphone Jack Insulation
255	PSHEZ1138AFZZ	J	AC	Sheet,External Terminal
256	PSHEZ1139AFZZ	J	AC	Sheet,Terminal,+
258	PCUSS0787AFZZ	J	AB	Cushion,Driver
259	PSPAZ0594AFZZ	J	AC	Spacer,Top Cabinet Fulcrum Bracket Fitting
260	TLABS0507AFZZ	J	AD	Label,Laser Caution
261	TLABS0508AFZZ	J	AD	Label,Laser Mark
262	PFLT-1160AFZZ	J	AB	Felt
263	PSHET0473AFZZ	J	AB	Sheet, Flexible PWB
601	LX-BZ1008AFFC	J	AB	Screw,ø1.4×2mm
602	LX-BZ0805AFFN	J	AB	Screw,ø1.7×2.5mm
603	LX-BZ0966AFFC	J	AB	Screw,ø1.4×1.5mm
604	LX-BZ1005AFFW	J	AB	Screw,ø1.4×12.5mm
605	LX-BZ1006AFFW	J	AB	Screw,ø1.4×8.6mm

ACCESSORIES/PACKING PARTS

⚠	RADPA6435AFZZ	J	BG	AC Adapter [MD-MT831W for Australia/New Zealand]
⚠	RADPA5402AFZZ	J	BF	AC Adapter [MD-MT831W Except for Hong Kong/ Australia/New Zealand]
⚠	RADPA7486AFZZ	J	AY	AC Adapter [MD-MT831H for Europe]
⚠	RADPA8493AFZZ	J	BH	AC Adapter [MD-MT831W for Hong Kong
	SPAKC6953AFZZ	J	AM	Packing Case [MD-MT831W]
	SPAKZ0537AFZZ	J		Pad,AC Adapter [MD-MT831H for Europe]
	SPAKZ0539AFZZ	J		Pad,AC Adapter [MD-MT831W for Hong Kong/ Australia/New Zealand]
	SPAKZ0541AFZZ	J		Pad,AC Adapter [MD-MT831W Except for Hong Kong/ Australia/New Zealand]
	TGANE1220AFZZ	J	AB	Guarantee Card [MD-MT831W for Australia/ New Zealand]
	TINSE1220AFZZ	J		Operation Manual [MD-MT831W for Australia/ New Zealand]
	TINSZ1407AFZZ	J	AR	Operation Manual [MD-MT831H for Europe]
	TINSZ1408AFZZ	J	AR	Operation Manual [MD-MT831W Except for Australia/ New Zealand]
	TLABG0527AFZZ	J	AC	Label,Hong Kong [MD-MT831W for Hong Kong Only]
	TLABM0671AFZZ	J	AC	Label,Feature [MD-MT831H for Europe Only]
	TLABN1578AF01	J		Label,Serial No.Packing Case [MD-MT831H for Europe]
	TLABN1579AF01	J		Label,Serial No. [MD-MT831H for Europe]

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
	TLABN1581AF01	J	AC	Label,Serial No. [MD-MT831W for Hong Kong]
	TLABN1582AF01	J	AC	Label,Serial No. [MD-MT831W Except for Hong Kong/ Australia/ New Zealand]
	TLABN1583AF02	J		Label, Serial No. [MD-MT831W for Australia/ New Zealand]
	TLABS0478AFZZ	J	AC	Label,CPA [MD-MT831W Except for Hong Kong]
1	GCASZ0090AFSA	J	AW	Battery Case
2	RPHOH0176AFZZ	J	AR	Headphones
2- 1	PCAPH8107AFZZ	J	AD	Cap,Headphones
3	UBNDT0086AFSA	J	AF	Handstrap
4	UBATI0088AFSA	J	BD	Rechargeable Battery
5	RRMCW0051AFSB	J	BC	Remote Control
6	SPAKZ0541AFZZ	J		Pad,AC Adapter [MD-MT831H for U.K.]
⚠7	RADPA8487AFZZ	J	BC	AC Adapter [MD-MT831H for U.K.]
8	QCNWG0382AFZZ	J	AK	Connecting Cord,RCA Type
9	SPAKA2748AFZZ	J	AD	Packing Add.,Accessories
10	TINSE1652AFZZ	J	AH	Operation Manual [MD-MT831H for U.K.]
11	SPAKZ0475AFZZ	J	AD	Spacer,Operation Manual [MD-MT831H for U.K.Only]
12	UBAGC0083AFSA	J	AH	Carrying Case
13	SPAKC6952AFZZ	J	AM	Packing Case [MD-MT831H]
14	TLABN1580AF01	J	AC	Label,Serial No. [MD-MT831H for U.K.]
15	QCNWG0422AFZZ	J	AQ	Connecting Cord,Optical Type
16	TCADS0085AFZZ	J	AD	Service Card [MD-MT831H for U.K.Only]
17	TINSE1654AFZZ	J	AE	Quick Guide [MD-MT831H for U.K.Only]
18	TLABN1578AF02	J	AB	Label,Serial No.Packing Case [MD-MT831H for U.K.]

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1,2	DHAIK3132AF01	J	—	Main/Jack (Combined Ass'y) [Except for Europe]

OTHER SERVICE PARTS

UDSKM0001AFZZ	J	AZ	Recording Mini Disc
88GMMD-110	J	BV	High Reflection Disc MMD-110 (TEAC Test MD)
88GMMD-213A	J	BT	Low Reflection Disc MMD-213A (TEAC Test MD)

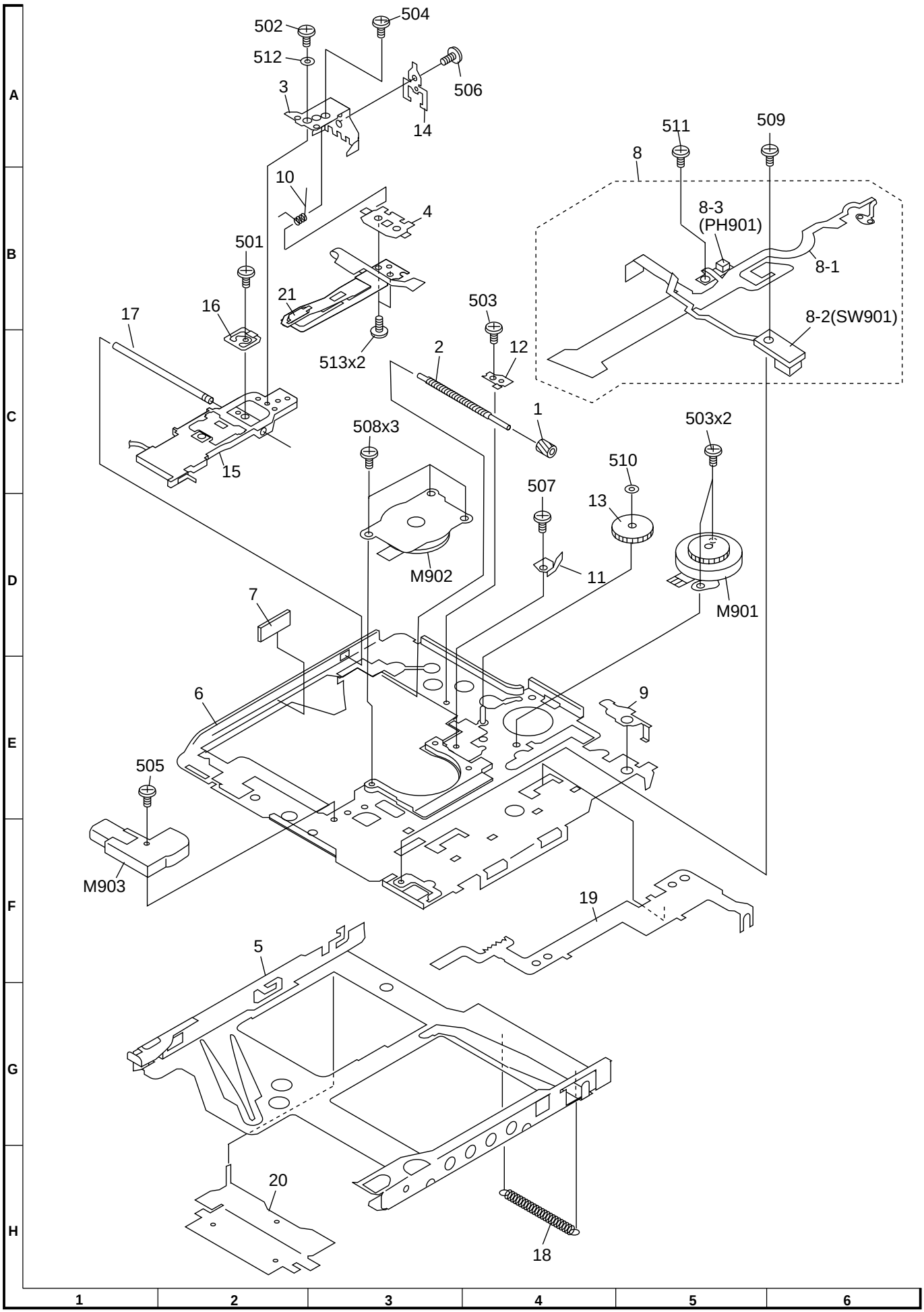


Figure 5 MD MECHANISM EXPLODED VIEW

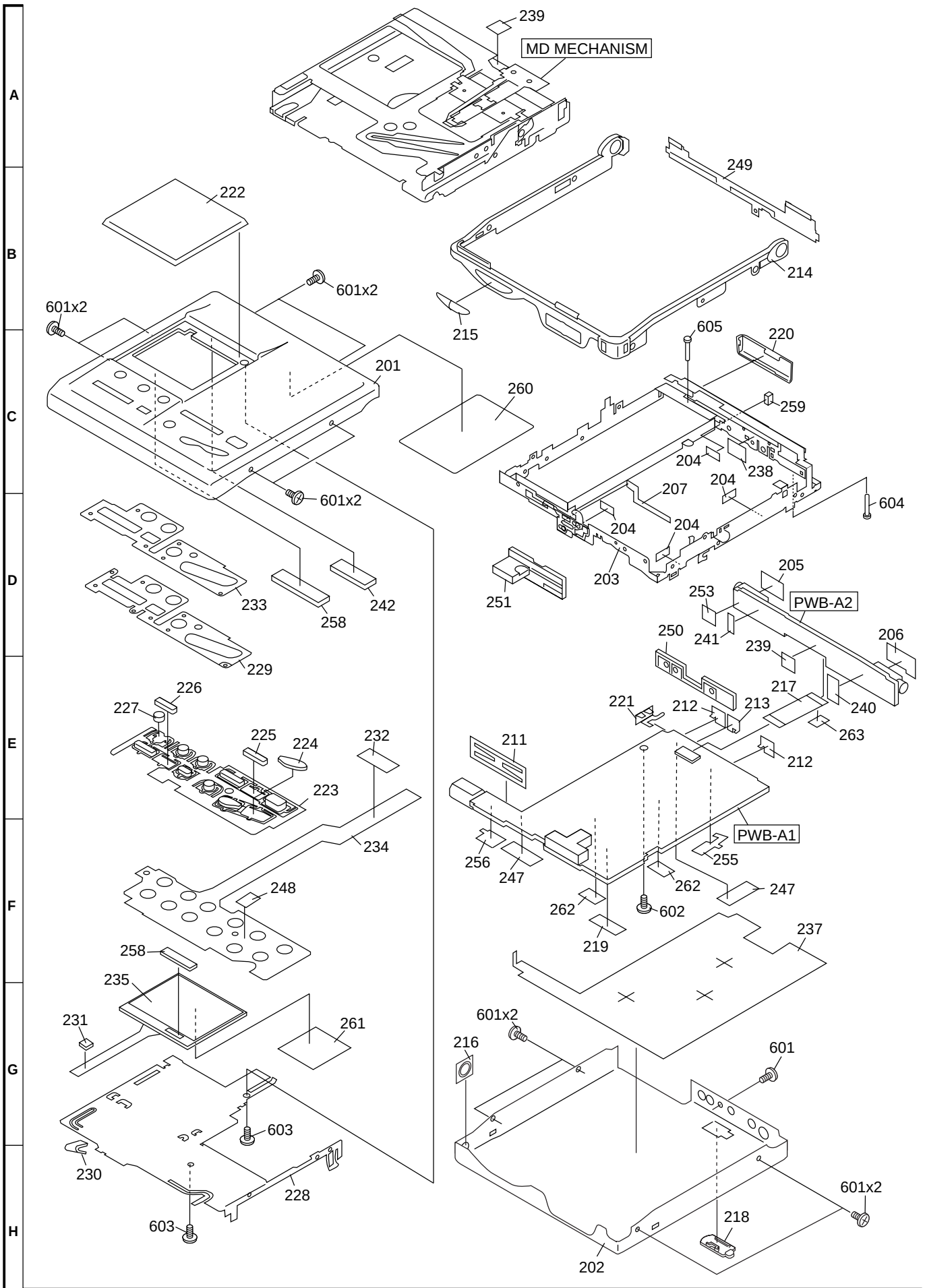


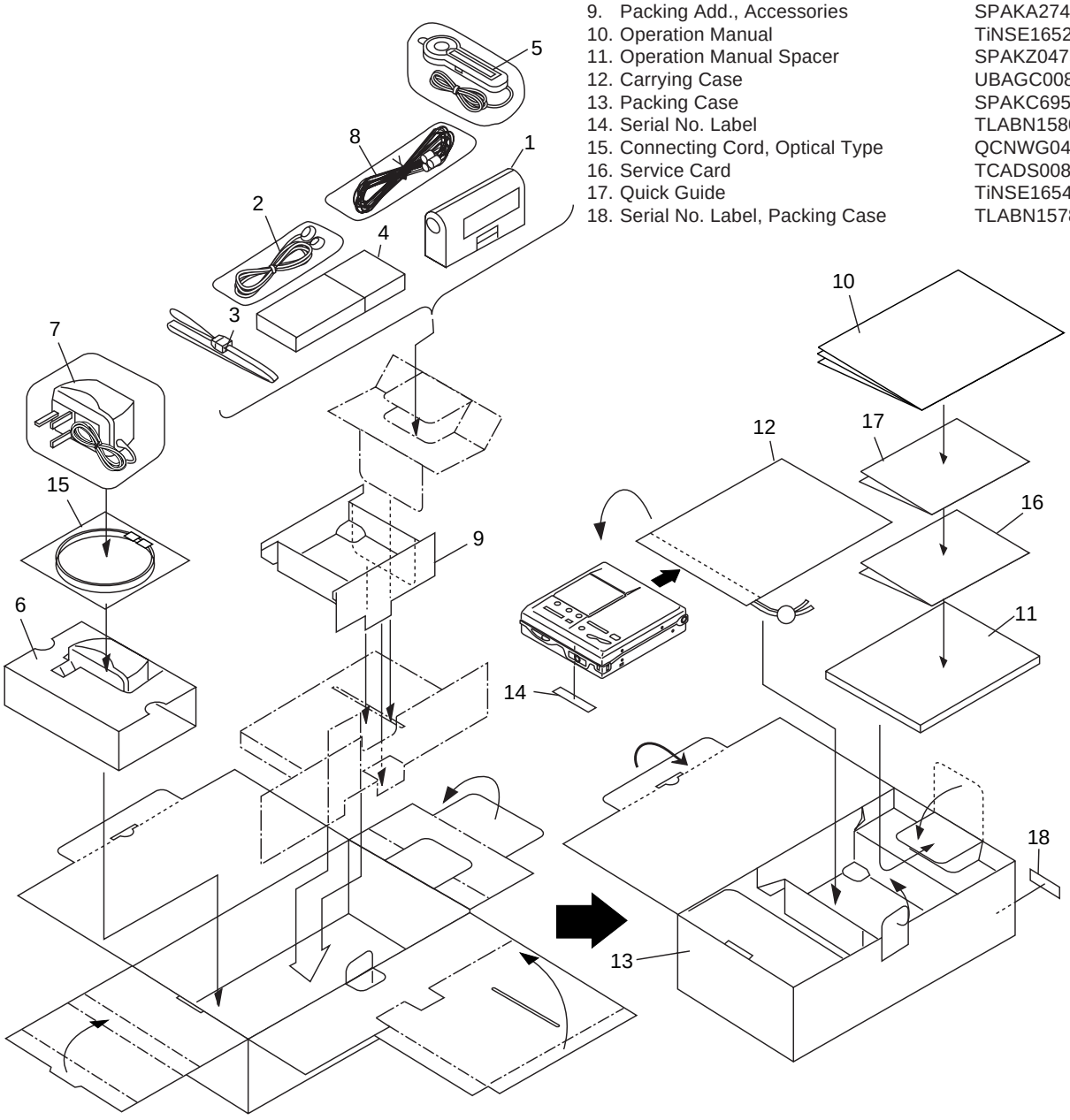
Figure 6 CABINET EXPLODED VIEW

MD-MT831H/W

PACKING METHOD (MD-MT831H FOR U.K. ONLY)

Setting position of switches and knobs		
UNIT	HOLD	OFF
Remote Control	HOLD	CANCEL

1.	Battery Case	GCASZ0090AFSA
2.	Headphones	RPHOH0176AFZZ
3.	handstrap	UBNDT0086AFSA
4.	Rechargeable Battery	UBATi0088AFSA
5.	Remote Control	RRMCW0051AFSB
6.	AC Adapter Pad	SPAKZ0541AFZZ
7.	AC Adapter	RADPA8487AFZZ
8.	Connecting Cord, RCA Type	QCNWG0382AFZZ
9.	Packing Add., Accessories	SPAKA2748AFZZ
10.	Operation Manual	TiNSE1652AFZZ
11.	Operation Manual Spacer	SPAKZ0475AFZZ
12.	Carrying Case	UBAGC0083AFSA
13.	Packing Case	SPAKC6952AFZZ
14.	Serial No. Label	TLABN1580AF01
15.	Connecting Cord, Optical Type	QCNWG0422AFZZ
16.	Service Card	TCADS0085AFZZ
17.	Quick Guide	TiNSE1654AFZZ
18.	Serial No. Label, Packing Case	TLABN1578AF02



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